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## THE TREATMENT OF ROTO-LATERAL CURVATURE OF THE SPINE

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**A**N extract from an editorial in the *American Journal of Orthopedic Surgery*, 1909, may serve to indicate concisely the present attitude of the profession toward the treatment of this deformity:

"Thus there are at present two widely differing points of view, both advocated by orthopedic surgeons of great experience. First, the deformity should be corrected by force and, in the corrected position, a plaster-of-Paris jacket applied temporarily, to be changed once or twice, so long as further improvement can be secured. Following this a really effective brace or corset is to be worn for many months and muscular exercise pushed to its limit in competent hands. Second, by the use of muscular exercise and stretching as much as can be accomplished and a more permanent and safer improvement brought about."

This citation presents an issue, an important issue, implying a radical difference in methods of treatment, but the statement is so brief that at least one side is inadequately presented. The words "muscular exercise and stretching" do not adequately describe what may properly be called developmental treatment. The two methods may be set in contrast as the mechanical and developmental, notwithstanding that each may employ to some extent the means emphasized by the other. In all essentials of treatment the one method is mechanical and the other educational and developmental. The purpose of this short essay is the advocacy of treatment along developmental and educational lines. Since

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1891 I have followed consistently this plan of treatment, departing from it in but few instances. The work has been directly under my supervision, five hundred cases having received treatment of whom I have made careful records and whose management came intimately under my own observation. The average time under treatment was about three months. Attendance in the gymnasium varied from one to three hours per day for six days in the week. The records taken on admission are:

1. Measurement of the circumference of thorax and of abdomen on forced inspiration and forced expiration.

2. Height, weight, examination of the spine as to the degree of mobility, examination of the feet to determine efficiency or weakness, physical examination of the heart and lungs, determination of any lack of symmetry in the lower extremities or pelvis. A considerable proportion of the patients were photographed, because photography afforded the most satisfactory method of record. This is done before the patient receives any instruction, and she is allowed to take her ordinary habitual attitude without modification. When photographed subsequently, after more or less training, the patient is expected to profit by her work and to bear herself accordingly, assuming and maintaining whatever is, for her, the ideal attitude.

The work may be described under three heads: (1) mechanical, (2) developmental, (3) educational.

Before amplifying these divisions it will not be inappropriate to note some points in diagnosis and aetiology. It has been a surprise to know how many there are in the profession who regard the term "spinal curvature" as describing one, and one only, definite condition. A broad, general distinction should be made which is elementary. The term "spinal curvature" is often employed wrongfully, I consider, to denote deformity resulting from tubercular or other disease of the vertebræ, causing destruction of the bodies, a falling together or coalescing of these, a shortening of the anterior aspect of the spinal column, and a consequent projection backward of the corresponding spinous processes, causing angular projection backward. The word "curve" does not properly describe this condition, as the backward projection generally presents an angle. It would be better to speak of it as angular deformity resulting from disease of the vertebræ, or to use the expression, "Pott's disease with deformity."

Sometimes, however, resulting from tubercular disease, there is also a lateral deviation of the column; and in the early stages of

the affection the lateral deviation may present itself, and not infrequently does so, before the backward angular projection has appeared. This condition may be very misleading and may cause one to fall into serious error; for it is a serious blunder to confound these two affections of the spine. One is a *disease* tending to a fatal issue; the other is a *deformity* without present existing disease, and causing in many instances but little inconvenience and disability. The one demands that attention be given to two fundamental factors in its treatment, first, complete rest for the diseased part, and secondly, the best means for increasing the general health, flesh, and tone, the employment of the most efficient aids to increase the power of resistance to the disease. The other—roto-lateral curvature—if it points to disease, points to states, the acuteness of which has long passed and which now require treatment directed to the rectification of deformity and any consequent disability.

It may be well to point out that the causes of roto-lateral curvature are numerous and varied. Radiography has shown that congenital defects are quite common. Just as asymmetry is sometimes found in other parts, such as ears unevenly placed, one eye lower on the face than the other, etc., so we may reasonably look for some departure from erectness in a part so unstably placed as the spine and for lack of symmetry in the parts of the pelvis and in the lower extremities. The congenital condition is well shown in two x-ray cuts here presented (Fig. 1.).

Accelerating causes coming subsequently serve to increase the deformity to such an extent that the curvature is pushed into notice in childhood, most frequently about the time of puberty. Once there is a departure from the norm in the matter of erectness, then careless habits in standing and sitting, unwise dressing, near-sightedness, etc., may serve to accentuate the deformity.

**MECHANICAL TREATMENT.** In trying to maintain the upright attitude, gravitation is a foe to ideal erectness. Spirit and energy should be manifested, not less in erectness and bearing than in countenance and speech. If a tall chimney or a high fence were leaning, it would seem the natural thing to shove it forcibly into an erect position and then supply a mechanical prop to maintain it there, and similarly forcible replacement and maintenance have been the chief means commonly recommended to correct deformities of the spine. There is, however, a manifest and radical difference between the subjects upon which or upon whom we are to exert our corrective efforts. The one is inanimate and obeys the laws of gravitation without protest, cannot form a habit, is not made weaker

by mechanical pressure, has no vital organs to be protected, has no soul to express itself in countenance and bearing, no educational possibilities. The other is a highly organized, sentient being having a complex, highly organized, central axis—the spine, manifesting a tendency to form habits which constitute the largest governing influence in life, easily learning to appropriate a crutch or support, possessing muscles made weaker by pressure and by being thrown out of action—the central axis forming an important part of the thorax charged with the protection of heart and lungs, and intended by nature to move untrammelled.

Mechanical support applied not only to correct but to maintain the correction, so as to keep the spine erect, implies the application of force that is lifeless, unyielding, and physiologically hurtful to a part which demands freedom of movement, development, and education. A mechanical appliance strapped or laced about the thorax compresses the muscles, causing them to atrophy, restricts the movements of the heart and lungs, lessening their powers of efficiency and of aeration of the blood, and—most important of all—encourages in the patient a habit of dependence instead of permitting a training to self-reliance. Such a corrective agent is restrictive; the corrective agency should be developmental. It impedes and hampers function; it should stimulate and inspire better functioning. I would prefer, in most cases, that the deformity should remain rather than it should be corrected—even if that were possible—by means so injurious, tending to hinder the child's normal development.

One should not readily assume that correction of the deformity will result from the use of mechanical supports. Much will depend upon the location of the deformity. If it is present in the cervical or high dorsal region, it is mechanically impossible to exercise any considerable corrective force without including the head or neck, or both. This is highly objectionable to the patient. If the curvature is found below the mid-dorsal region, mechanical force may be successfully employed; but when the fixation apparatus is removed, there is an inveterate tendency to relapse into the old position, a tendency made worse by the muscular atrophy caused by the mechanical appliance. Advocates of mechanical methods have likened the treatment to the forcible manipulative and retentive treatment of congenital club foot; but the cases differ so widely that there is no analogy which should justify reasonable comparison. In the case of the spine the erect attitude tends to precipitate relapse. In the use of the foot weight-bearing tends to

maintain the correction already effected by mechanical means. In the spine the continuance of a mechanical support after correction is unnatural and detrimental; in the use of the foot a strong force to maintain correction may be exerted by the boot in a perfectly natural manner.

Mechanical means may be employed to aid in the correction without doing injury if they be employed temporarily. It is the employment of mechanical force as a continuous agency, making pressure on muscles, skeleton, and important organs, and acting as a crutch, which proves injurious. I should consider a harmful mechanical agency any brace or corset which presses upon and constricts the trunk for more than a few minutes at a time.

Mechanical means may be employed so as to be helpful and not hurtful, and are such as the following:

1. Direct extension, supporting the weight of the body by straps passing under the chin and occiput, permitting the patient thus to suspend the entire weight of the body for at least several minutes at a time. The monotony of the proceeding will be less if arrangements are made by which the patients, while thus supported, can swing through a comparatively large arc. The exercise so given, which otherwise might prove irksome, is thus changed into play; also, a number of children can in this way work together; and for years I have observed that they form various combinations, taking hold of hands, and adopting a great variety of means which prove attractive to children and youths. This exercise really serves developmental purposes. The movements of the spine in swinging, the stretching for the few minutes during which it is done, and the returning to the normal, unstretched condition serve as a species of deep massage for parts that could not well be reached by any ordinary methods, thus affecting the deep, spinal circulation; hence, it may be said of this mechanical means that it is truly developmental and has no restrictive elements.

2. Extension with side force. One of the illustrations given in this paper will show what I consider the most effective means that has been employed for the application of a direct force, pushing the deformed ribs and spine into a position of correction (Fig. 2). While the patient is extended as indicated, and while even heavy weights amounting sometimes to fifty pounds are strapped to the feet, a girth is drawn around the thorax so as to press obliquely forward and lateralward, carrying the prominent, backwardly placed ribs forward, pressing the convexity of the spine toward the mid-line, and untwisting the rotated vertebræ. While thus sus-

pended and mechanical force employed, all the organs of the body are left perfectly unhampered, free breathing is permitted, and there is no pressure upon the ribs of the concave side of the curvature. Pressure is maintained for as long a time as the endurance of the patient renders advisable, and is found to be from one minute to fifteen, and may be repeated several times during the day. The application of this mechanical force can do nothing to produce atrophy, but, on the other hand, as stated in a former paragraph, becomes a species of massage, reaching even to the ligaments deeply placed upon the concave aspect of the deformity.

The fact, also, that this is a force which is entirely under the control of the patient and from the action of which she may relieve herself at any moment by placing her feet upon a stool, thus relieving the extension, is one of great importance. When a force, as by screw-power, is operated by the hand of another, the patient, unable to obtain relief when such is desired, does not yield as readily, relaxing her muscles; and the acting force has less freedom to accomplish its purpose. The contrast here is summed up between the words, "freedom of action" and "compulsion."

3. Rotatory mechanical force. The understanding of the application of this force may be aided by the examination of Fig. 3. A very simple stand or bench is made, having two horizontal portions well padded, upon which the shoulder and pelvic girdles lie. These horizontal resting-places can be brought closer together for smaller individuals and carried farther apart at will. From a bar running parallel with the body, and at a higher plane, is carried a strap about three inches in width and ending in a bag, into which iron weights may be placed up to the extent of one hundred pounds. This strap, between its point of attachment to the bar above referred to and the bag containing the weights, is permitted to press upon the prominent angle of the ribs on the convex aspect of the deformity in such a way that two elements of force are acting, the one a lateral force, and the other vertical in the direction of gravity, and therefore pressing the prominent ribs forward. As the bar is stationary and the bag of weights is tending constantly downward, a rotatory result is brought about, tending directly to correct all the elements of the deformity. The use of this machine implies the presence of an attendant, so that the force may be increased up to the point of endurance and so that the patient may be set free when the limit of endurance is reached.

4. Forceful evolutions. This I find somewhat more difficult to describe. There are a variety of free movements. (1) While

suspended by straps passing under the chin and occiput and raised several inches above the floor, the patient holds a rope parallel with that by which she is suspended, and by its aid makes vigorous circumductory movements of the body, carrying the spine rapidly and repeatedly around in such a way as to greatly increase the suppleness of the column. (2) The same means that have been employed for suspension are employed again, so that the space between the floor and point of suspension is probably a foot less than the height of the patient. Placing the feet firmly on the floor, she now leans forward and proceeds to circumduct the body between the two relatively fixed points, these being the feet upon the floor and the suspension straps under the head. The body is thus circumducted for about ten circles to the left and then ten circles to the right. This again, as in the various other movements described, serves as a very vigorous massage to all deeper structures and as a stretching force acting especially upon the shorter ligaments of the concave side of the spine.

5. Force exerted by the patient's own hand. This is much less powerful, but is readily applicable, and will be frequently employed by a patient who understands its efficiency and whose interest and coöperation have been elicited. The patient must be taught how to do this standing before a mirror. The hand upon the convex side of the deformity should be carried well upward and backward so that the "heel of the hand" is made to press forcibly upon the ribs, directing the force lateralward and, as much as possible, forward.

6. Force employed while sleeping in bed. The use of the Bradford frame in the treatment of Pott's disease is well understood. If the side bars of the frame be bent to an extent of fifteen, twenty, or even thirty, degrees at a suitable point, the patient may lie upon the frame in such a way as to make hyperextension at the point of chief deformity (Fig. 4.) Several modifications, however, are to be added to this Bradford frame in order to render it efficient. A bracket, or rod, is to be attached at the head end of the frame, and straps for suspension are employed so that as the frame is placed in an inclined position the body-weight maintains constant extension (Fig. 5.) In addition to this, a steel spring is arranged upon the cot so as to make constant pressure against the prominence of the ribs on the side of the convexity, pressing this constantly in two directions, lateral and forward, as before explained, giving a resultant force which is rotatory. To increase this corrective force, the bracket at the head of the frame

is not situated midway but placed further toward the side of the convexity; also a girth passes around the pelvis pulling toward the same side. This frame, so adjusted, I have found a most effective means for dealing with the deformity in infants and young children, who sometimes manifest the condition in an exaggerated degree at a time when it would be difficult or impossible to employ all or any of the foregoing agencies. I may be permitted at this point to recite the following case:

K. G., six months old, presenting a strongly marked curvature at birth, a somewhat delicate child, but otherwise normal. The cot, as modified by the rib-presser described above, was employed continuously for six months. When it is said that it was employed continuously, it is to be understood that the child during this time was never in the upright position, even when nursing, being bathed, or clothing being changed. Day and night the child lay on the cot, or frame, as described. Little difficulty was found in so using the cot as to over-correct the deformity in a child so young. After the first six months the child was allowed to learn to walk and to be free from the cot, only a few hours each day. At the end of another six months the child had learned to walk fairly well and was found to be very erect. There was no criticism that could be made of its attitude. The child is now six years old, still sleeps for some hours out of every twenty-four upon her cot, and the correction is fully maintained. Her general attitude as she moves about is one of erectness of carriage.

**DEVELOPMENTAL TREATMENT.** Not much need be said upon this division of the subject. It is universally conceded that systematic, muscular exercises, within physiological limits, favour growth in size, power, and efficiency. Not in all cases but in many, the muscles of the patient need to become stronger in order to be able to meet their responsibilities. The increase in size, power, and efficiency of muscle, however, is not the most important desideratum.

**EDUCATIONAL.** The educational is the most important factor in the treatment of spinal curvature, and the most neglected. It is human to want to follow along the paths made familiar by habit, and for the patient to allow herself to go in the lines of least resistance. This natural tendency must be overcome. The patient must be instructed, wrong attitudes pointed out and correct ones shown. For this purpose, large mirrors should be employed, showing the figure from all points of view. The patient is in this way enabled to form a correct judgement—learns what is a faulty

attitude and what a correct one. She will at this point, if wisely treated, show a helpful, intelligent interest in her own case, previously non-existent, and now she is ready to give what is essential to success, a cordial coöperation.

Under wise and tactful guidance, a patient, whose time reaction at first is distressingly slow, will show largely increasing interest and promptitude of action; one who allows the body to droop negligently into a bad posture, evincing no forceful purpose, will learn to assume an energetic bearing indicative of a newly created ambition to reach an ideal. The first goal placed before the patient is the erect attitude—the most nearly correct one for her—which she saw herself assume while being instructed before the mirror. In the effort to attain this her will is cultivated and strengthened, her appreciation of correct attitudes and movements is heightened. Her efforts are stimulated, not only by the guidance of a tactful director but by the example of others doing the same work by her side and aiming to attain the same results. To reach these educative results, certain conditions are essential. The instructor or director must be truly interested, enthusiastic, and tactful. If her duties are summed up in "doing" a certain list of exercises in a perfunctory manner, then her presence is a hindrance and not an encouragement. She must be able to make clear and attractive the ideal to be attained. It must appear an important one worthy to be striven after. The work, in nearly all cases, will grow monotonous and irksome if done alone; several—six or eight—working together to attain the same result stimulate each other by emulation and example.

While the exercises, for the most part, should imply work requiring effort and concentration of mind, yet games and play which will break up monotony and take the self-centred ones "out of themselves" should find a prominent place.

Mechanical force, directly and intelligently employed for short periods to force a deformed thorax into erectness and symmetry, should alternate with free exercises and games. The work should be so arranged as to afford a true physiological succession, so as not to exhaust nor unduly weary any one set of muscles or organs. This principle is well set forth in Swedish gymnastics. Systematic daily drill should continue till the maintenance of an ideal attitude of erectness ceases to demand constant concentration of effort, but becomes spontaneous. The time required to attain this standard must depend much upon the individual patient and upon the thoroughness with which the foregoing directions are followed out.

**OUR RESPONSIBILITY.** In meeting our responsibilities relative to these patients it is our duty to ask ourselves what we hope to accomplish, what is the most valuable service which we can render? The parents, the patient, and the surgeon, are likely to fix attention upon the one subject, the deformity of the spine, with the purpose of lessening or curing the curvature, forgetting that the patient is of greater importance than the deformity, that improvement of her respiratory power and of her cardiac efficiency is a work of much greater value than is the lessening of the degree of the curvature.

It would seem that in the class of curvatures which may be described as simply postural there can be little ground for debate. It is in cases where marked bony changes have occurred and where there is fixed deformity that there would seem to be justification for employing forcible mechanical means for correction and afterward for maintaining the correction. Even if it were granted that less correction of the actual deformity was accomplished by the methods here advocated than by the use of rigid and forceful constricting jackets or braces, yet I would prefer it because of the incidental advantages in the way of thoracic development, increased mental and physical alertness, improved muscular efficiency, and a general gain in healthful vigour.

Confinement in braces and jackets, on the other hand, produces atrophy, not only a lessening of muscular size and power but actual changes in bone. I need only recall the fact that a leg which to-day can successfully resist a certain breaking force will yield readily and be broken by the same amount of force after a few weeks' confinement in a fixed dressing of plaster-of-Paris. Where muscular efficiency is below par, and where habits of incorrect attitudes are present, is it wise to adopt a method of treatment whose tendency is to increase the evils?

Further, I am not prepared to admit that the so-called structural scolioses cannot be modified and greatly improved by the application of "short-time" force, followed at once by educational physical training. Patients who have crural asymmetry, so that one lower extremity is an inch shorter than its fellow, may learn to assume and maintain an attitude closely approximating ideal erectness (Figs. 6, 7, and 8).

A trunk at first not only deformed but rigid, becomes supple and yielding after the daily application of force used for a short time. In this condition of increased mobility of the spine, careful instruction before a mirror should be given and continued until the patient understands what attitudes are faulty and what is a correct

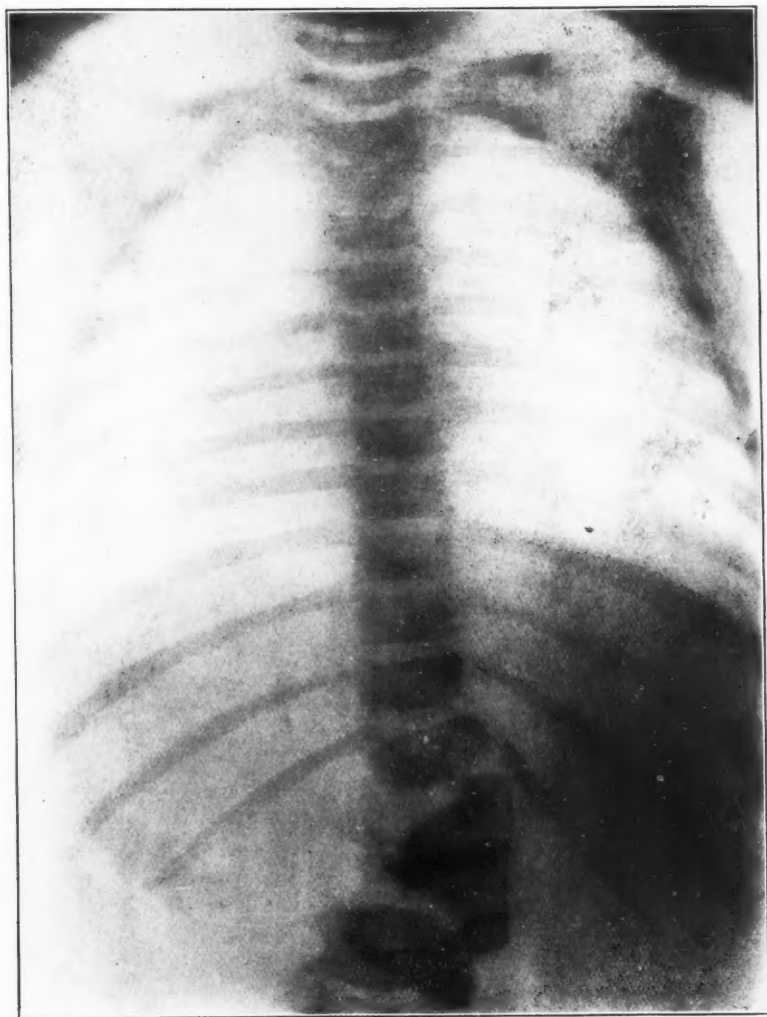


FIG. 1.—Congenital defect of the lumbar vertebrae causing marked scoliosis at five years of age.





FIG. 2.—Extension with side force, so as to make rotation at the same time as lateral pressure is made.



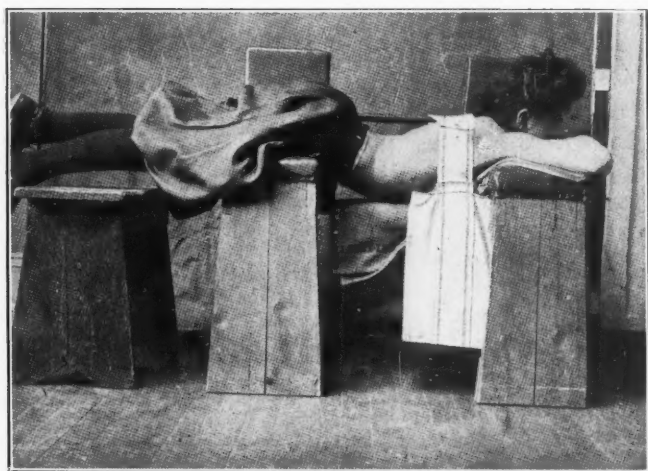


FIG. 3.—Strap suspending weight—bag presses only on the prominent ribs, while shoulders and pelvic girdles are held in fixed position.



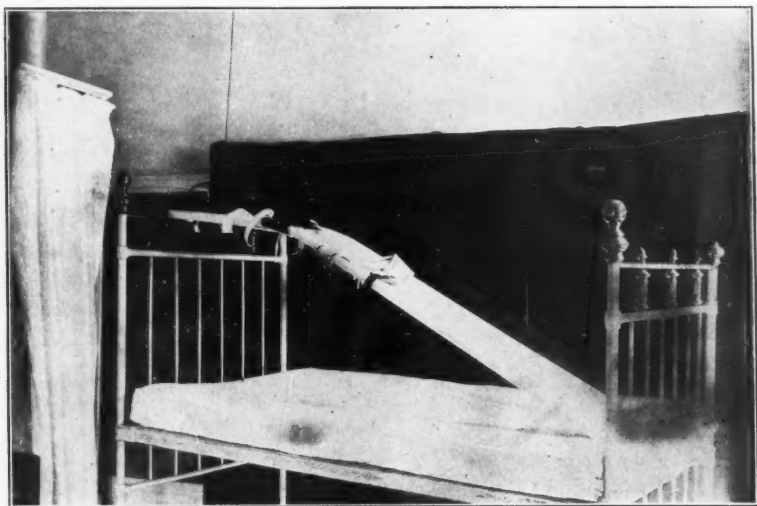


FIG. 4.—If the steel "rib-presser" presses the body toward the left, then the head-straps pull the head toward the right, and the girth passing around the pelvis pulls also toward the right.





FIG. 5.—Lying on extension cot, rib-presser at right side, pelvis and head both pulled in same direction.





FIG. 6.—H. C., twenty-two years of age, pelvis droops three-quarters of an inch on left side.



FIG. 7.—H. C., after three months' training, and having three-quarter inch cork under left foot.





FIG. 8.—H. C., after training, but having no cork under foot.



FIG. 9.—A. B., fifteen years of age, October, '09, standing in attitude habitual at that time.





FIG. 10.—A. B., May, 1910, after seven months' training.



bearing. Practice in various gymnastic movements should follow, always in such a way that the patient centres about the attitude admitted to be the most nearly correct for her (Figs. 9 and 10).

Forced breathing exercises have an important influence in correcting thoracic deformities. This fact is admitted by the advocates of constrictive mechanical means, in as much as they free the flattened parts of the thorax from pressure by cutting away the jacket at that part, and they increase the pressure where the bony thorax is prominent. Without such constriction, a similar result will follow, though more slowly, but without the harmful consequences in the way of atrophy, not only to muscles and bone but to will power.

That much may be accomplished by training, even when the curvature is due to inequality in the length of the legs, may be illustrated by the following: M. P., a young woman nineteen years of age, with a strongly marked deformity which was caused partly by asymmetry of the lower extremities, and which had existed for a number of years, was treated by gymnastic training and by having one inch of cork placed under the shoe worn upon the shorter limb. After several months of work she gave up the elevated shoe and maintained, almost perfectly, her improved attitude.

The one method, by the use of forcible, repressive, mechanical means, impedes growth, hampers the development of important vital organs, favours reliance upon supports, stands in the way of cultivating a graceful ease and energetic bearing, discourages the growth of personality; the other, in every phase of the work, not only corrects deformity but tends to an increase of strength, added muscular development, increased oxygenation, improved cardiac tone, and begets self-reliance, self-mastery, and a conscious independence of artificial aids.

## INTERNAL HERNIA: WITH A REPORT OF A CASE OF MESOCOLIC HERNIA

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**T**HOUGH retroperitoneal and other forms of internal hernia are rare in comparison with some intra-abdominal surgical conditions, and rare also when compared with inguinal, femoral, and ventral hernia, they are, nevertheless, of sufficient importance to merit discussion. One of the reasons for the importance of attention to them lies in the fact that many of the cases are ushered on the scene by symptoms of acute obstruction. Operation for such a condition, with the patient usually in a serious condition, may be baffling in the extreme. The prolonged search for the cause of obstruction may be the cause of additional shock, sufficiently severe to cause a fatal termination. An orderly review of the probable places for an obstructed hernia, instead of a somewhat haphazard search of the whole abdomen, with possibly an almost complete evisceration, may avoid this additional shock.

Taking Moynahan's exhaustive monograph on retroperitoneal hernia as a guide, the chief forms of internal hernia may be said to be these: left duodenal, right duodenal, mesocolic, hernia into the retrocolic fossa, into the intersigmoid fossa, into the foramen of Winslow, and, lastly, into the lesser sac through an abnormal aperture. For the anatomy involved in these various hernia the author is indebted to Moynahan's valuable little book.

Left duodenal hernia occurs into the fossa of Landzert. This fossa is situated to the left and some distance from the duodenum. It is caused by the raising up of a fold of peritoneum, the plica venosa, by the inferior mesenteric vein. The orifice of the sac looks downwards and to the right; the blind extremity is directed upwards and slightly to the left. This form of retroperitoneal hernia is probably the most common.

Right duodenal hernia occurs into what Moynahan has named the "fossa of Waldeyer." "This fossa lies within the cavity of the

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arch formed by the superior mesenteric artery; its orifice looks to the left, its fundus to the right and downward. Behind it are the lumbar vertebræ covered by peritoneum."

Mesocolic hernia occurs into the mesocolic fossa, which is formed by a fold containing the ascending branch of the left colic artery. "This fold forms the anterior border of the fossa, which extends to the left between the layers of the transverse mesocolon in the direction of the splenic flexure." This is a rare form of hernia.

The retrocolic fossa lies behind the cæcum and the lower part of the ascending colon. Its orifice points almost directly downward and the fundus extends upward in the direction of the kidney. Of this form of hernia Moynahan cites only seven cases reported up to 1906.

The intersigmoid fossa is formed by the two layers of the mesocolon of the sigmoid flexure. The orifice points downward and the fundus upward. The iliac artery lies behind, covered only by the posterior peritoneal wall of the fossa. The sigmoid artery lies above and to the right. Treves<sup>1</sup> estimates the frequency of the fossa as occurring in eighty-four per cent., and Moynahan in seventy per cent., of all bodies examined. Only two authentic cases of hernia into this fossa were reported up to 1906, according to the judgement of Moynahan. These were reported by Eve<sup>2</sup> and Eccles.<sup>3</sup>

Hernia through the foramen of Winslow is more frequent than many of the varieties already cited. From a review of twelve cases reported in the literature, Moynahan attempts to outline the symptoms of this variety and says: "In a typical case we should expect to find acute intestinal obstruction, with intense, almost intolerable, epigastric pain, with epigastric prominence or tumour, such prominence being dull on superficial, slightly resonant on deep, percussion. It is interesting to note that there are no recorded symptoms of pressure on the hepatic artery, portal vein, or bile duct. It may be noted that in the case of Neve<sup>4</sup> the symptoms were those of subacute obstruction."

Of the last form mentioned in the list, namely, hernia into the lesser sac through an abnormal aperture, Stolzenberg,<sup>5</sup> writing in 1910, reported a case, and reviewed those already reported. He found the following: Deville,<sup>6</sup> Boettcher,<sup>7</sup> Schwalbe,<sup>8</sup> Ihsecke,<sup>9</sup> each one case, and Ackerman<sup>10</sup> one of his own and three others collected from the Swedish literature. These, with two reported by W. J. Mayo<sup>11</sup> and the author's case, make twelve in all. Reference might be made here to Blandin's<sup>12</sup> case, where, at autopsy, "a

large segment of the small intestine had entered the foramen of Winslow; a portion of this segment left the lesser cavity of the peritoneum by an opening in the transverse colon. At this point the gut was strangulated."

Stolzenberg's case was an autopsy of a thirty-seven year old man who had suffered for ten years from digestive troubles. There was a suspicion of malignancy and the patient was sent to the hospital, but died before operation was performed. The autopsy revealed a hole in the transverse mesocolon through which a section of the terminal portion of the ileum, and a loop of the jejunum, escaped. The rest of the small bowel had passed through the opening. A little of it remained in the lesser sac. There was a tear about four cm. from the margin of the gastro-hepatic omentum, however, through which the greater part of the small intestine had passed and was again lying in the abdominal cavity.

Mayo's first case, a female aged fifty-nine, gave a history of indigestion for fifteen years. Pain three or four hours after meals was associated with eructations of gas and sour fluid. Vomiting was frequent latterly. "Several times she had vomited food known to have been eaten a week previously." At operation it was found that there was an opening through the transverse mesocolon and one through the gastro-hepatic omentum through which the small intestine had passed and was found lying in front of the stomach. There was a duodenal ulcer present.

The second case was also a female, aged thirty-two, who, since she was seven years of age, had attacks of gastric pain. These attacks had no constant relation to food. At operation there was found a tear of the transverse mesocolon through which five feet of intestine had passed. This presented above the stomach as a tumour covered by the gastro-hepatic omentum. There was a perforated duodenal ulcer.

CASE REPORT. Mrs. C., aged twenty-eight, entered the Winnipeg General Hospital, May 20th, 1912, and was discharged June 10th. Except for the history of indigestion, there has been no illness worthy of note. Her complaint of "stomach trouble" commenced at about the age of fourteen years. Since then the illness has come in distinct attacks, during which she would have a great deal of pain and discomfort. Between attacks she would be quite well, and could then eat anything desired. For some years these attacks came on only in the spring and fall. During the summer, particularly, she felt entirely well. As the years went on the attacks came closer together and lasted longer, till, during the

last year or more, she has not been entirely free from trouble at any time. She thinks that the attacks were sometimes precipitated by overwork.

Her chief complaint was pain, which was described as burning. It came on one to one and a half hours after taking food. This was accompanied by eruptions of gas and sour fluid. It was relieved by taking food in any form. She says that solid diet gave freedom from pain one to two hours longer than did liquid diet. Latterly the pain was felt through to the back over the twelfth rib. The severe attacks were relieved by lying across a pillow. Vomiting has been a prominent symptom. It has been present almost since the trouble began. At first it would occur at any time during the day when the pain became bad. The vomiting always gave her immediate relief, which continued until after the next meal. In the early years it consisted of sour liquid; blood had been present for a number of years, but the patient was not clear as to how long. During the last five years the type of vomiting had gradually changed, both as to time, quality, and quantity. At the time she came under our observation she vomited regularly once a day and about the same hour, namely, after the evening meal. At this time she would vomit all the food taken at the last three meals, and all quite undigested. Blood had been present in larger quantities. It frequently came at the end of a vomiting spell, and then quite red. The vomiting of three undigested meals each evening was the outstanding symptom, in the eyes of the patient, at the time she entered the hospital. She had been habitually constipated. Nothing had ever been seen in the stool which she took for blood. For years she had slept on the left side, feeling very uncomfortable when lying on the right.

On examination, the patient was not as emaciated as one would expect from the history. In the evening after supper she was given some rice and raisins. Before breakfast the stomach was emptied of one ounce of thin, milky fluid containing rice and raisins. It showed free HCl, none; lactic acid, a trace; blood, none; total acidity, 10. She was then given a meal of toast and tea. Forty-five minutes later the stomach was emptied of three ounces of thin fluid containing fine granular material. There was no free HCl, no lactic acid, and no blood, the total acidity was 20. Her blood examination showed hæmoglobin, 60 per cent.; red blood cells, 5,500,000, and slight poikilocytosis. The colour index was 0.6. There was no occult blood found in the stool. Palpation of the abdomen revealed tenderness over the whole pyloric region. The stomach was prolapsed; no mass was felt.

From the foregoing history it was evident there was some obstruction to the outlet of the stomach. This was thought to be due to duodenal ulcer, but a diagnosis could not be made which would account for the later history. An exploration was advised.

The operation was performed with Drs. Guest and Gorrell assisting. An incision was made through the upper end of the right rectus. The liver was found one and a half inches lower than normal. The fundus of the gall-bladder was adherent to the transverse colon, the duodenum, the stomach, and the liver. There was an old, healed ulcer of the duodenum. The stomach was prolapsed, the pylorus being almost as low as the umbilicus. The cæcum was easily drawn into the wound, when a chronic, adherent appendix was removed. Further examination of the stomach revealed the fact that there was a perpendicular tear in the transverse mesocolon and the gastro-hepatic omentum. Through this all the small intestine had passed from behind forward, except the proximal three inches of the jejunum, and the terminal six inches of the ileum. The transverse mesocolon and the gastro-hepatic omentum were fused, so that the lesser sac was obliterated. The stomach lay so low that the jejunum came straight forward from its origin over the lesser curvature of the stomach. The stomach was unduly U-shaped. The intestine was not obstructed at any point. The gut was all replaced and the aperture closed.

The duodenal ulcer had not materially obstructed the pylorus during healing, therefore gastro-enterostomy was not done. The adhesions about the gall-bladder took the form of a distinct membrane with perpendicular bands of fibrous tissue. It was abundantly supplied with blood vessels. It extended down the right side to the ascending colon, but did not involve the cæcum, as originally described by Jackson. No lesion was found in the stomach. The adhesions above referred to were carefully tied off. No gall-stones were present. The patient made an uneventful recovery and left the hospital on the twelfth day.

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## THE HEART DURING SOME ACUTE INFECTIONS

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**T**HE severity of an infection, making allowance for the age of the patient, is often estimated only on a careful examination of the heart; while the fatal termination in many acute diseases is rightly ascribed to failure of the circulation.

Within very recent years much that is illuminating has been gained from the new method of studying the circulatory system, and for phenomena hitherto obscure and perplexing better explanations have been found. In the light of the new teaching, added interest centres about the clinical observations of all cardiac conditions, and as a result the treatment of disturbances of circulation, whether induced by disease of the heart itself or by toxins resulting from an acute infection, is placed upon a much more satisfactory basis. In his address on cardiac failure recently published, Sir Clifford Allbutt shows how indefinite, how inconstant, how obscure are the symptoms and the signs of myocardial inefficiency viewed from the clinical standpoint, while he points out at the same time that there is the want of parallel and of apparent correlation between the physician and the pathologist. In many cases the physician cannot tell when the heart is about to fail; the pathologist cannot detect the cause of its failure, nor, on the other hand, can he explain how the heart has gone on so long. One cannot question the truth of these statements, yet it must be admitted that it is not a complete statement, for without doubt a correlation between the physician and the pathologist is more and more definite in matters pertaining to disturbances of the circulation.

Whether the physiology or the pathology of the heart is under consideration at the present day, the heart muscle receives the chief attention. The heart beat is myogenic. Pulse irregularities of serious significance originate in that structure, and in the majority of cases heart failure is explained by cardiac dilatation.

The heart, during infection, may be the seat of changes, inflammatory or degenerative, localized or diffuse, with the endocardium, myocardium, and pericardium separately or collectively involved. Again, the neuro-muscular mechanism may be disturbed by the fever and the toxins, or the heart may be affected as the result of changes largely peripheral, or, as Allbutt says, "There may be a dissociation from its peripheral complement, a loss of tone in the 'peripheral heart' so that it beats the air in vain."

Needless to say, it is a matter of nice diagnosis to estimate these factors in the altered circulation incident to fever and toxæmia, and to place a right value on that factor, or those factors, threatening in a given case. We know that rheumatic infections are common in the various structures of the heart, inducing pathological changes more or less permanent. To influenzal infection has been ascribed a number of cardiac sequelæ, while cases of pneumonia, diphtheria, and typhoid fever terminate in cardiac failure, sometimes satisfactorily explained by the careful pathologist by the anatomical lesions found.

The graphic method enables one to detect a few important conditions which might otherwise pass unnoticed, and all that is new in the examination of the circulation has served but to interpret the older and simpler methods through which the main circulatory disturbances may be recognized. We judge the heart largely now, as hitherto, by the rate, the rhythm, and the pressure under which it does its work. A diagnostic value attaches to the rate of the heart in acute infectious diseases. The slow pulse compared with the high temperature in typhoid fever and the very rapid pulse of pneumonia and scarlet fever serve as illustrations. A continued high pulse rate, or a sudden slowing of the pulse in any case, is ominous.

*Departures from the normal rhythm* of the heart and pulse find new interpretation by the graphic method which aids so much in teaching. An altered pulse rhythm is a prognostic sign of some worth, and according to its type one may know something of the changes taking place in the heart.

It is a general rule that the *blood pressure* falls considerably below normal in all acute infections. The tonic action of the vasomotor centre is diminished, the arterioles are dilated, the vasomotor centre may be paralyzed. The myocardium may be diseased, the heart dilated. As the heart—the left ventricle—and the peripheral resistance are the chief factors in keeping up the blood pressure, it is not difficult to find an explanation of the

low pressure usual in uncomplicated cases of acute disease. Recent investigations tend to explain that the low pressure of infectious states is brought about by the action of the poison of the disease on the functions of the adrenals diminishing the secretion. So marked is the lowering of the blood pressure when a circulatory failure supervenes early in the disease, that vasomotor and not myocardial conditions explain the result. As it has been aptly expressed, such a death is glandular rather than myocardial. Later on in the course of the disease there is the added condition of definite myocardial disease so often demonstrated, by which the other important factor in maintaining blood pressure, the left ventricle, is diminished in value.

When one examines the chief points brought out by the graphic method alone concerning the heart muscle and the circulation while influenced by acute disease, it must be admitted that there are but few signs of importance. There are two tracings, however, which must be mentioned; first, that showing delayed conductivity or partial heart-block; and secondly, that of the *pulsus alternans*. It is only by this method that these pulse irregularities can be detected. The former is discovered quite frequently. Already several cases with autopsies are reported of depressed conductivity in the acute infections, such as diphtheria, pneumonia, etc.

An alternating pulse is rarely described in such cases, yet it should be sought oftener, as a depression of contractility is an important prognostic sign, and like those cases of depressed conductivity may be revealed in its less pronounced form only by the graphic method. We should then supplement our old and well tried methods of examination, including auscultation, with the graphic method where possible, at the same time observing more frequently the blood pressure in both the systolic and the diastolic phases.

Once more let me lay stress upon the necessity of carefully observing the three points—rate, rhythm, and blood-pressure—in estimating the disturbance of the circulation. It has been pointed out already that *vagus* hypertonicity due to a recent infection may account for the slowing of the heart after a febrile attack. Further, as heart-block may be experimentally induced by *vagus* stimulation, it is thought that those cases of partial or transient depression of conductivity may be ascribed to the same cause. Or they may be explained even more readily by considering that the conductivity is inhibited by toxins acting

directly upon the conducting muscle fibres. Such changes account for altered rate and altered rhythm.

The rhythm of the pulse, however, during the febrile state is usually regular. A pulse at other times irregular loses this quality during fever. It is rare to note the pulse in a state of arrhythmia during the course of typhoid fever. Even the fatal cases lack this sign until very near the end. Irregularity of the pulse due to extra systoles of the heart occurs as a result of infection, though, as an immediate result of infection, it is rare. "It is not advisable to neglect them entirely as they give some evidence of disturbed mechanism," says Lewis. Cardiac irregularity of the juvenile-respiratory type, or so-called sinus irregularity, is common in children and signifies nothing abnormal. It is found frequently after fever in acute infections in children, and it has been described as present during the febrile attack. Vagal influence, absent in health in the adult, may be active once more in disease. Cases illustrating this feature have been observed in convalescence.

Of all the clinical signs indicating myocardial mischief, the rate of the heart beat must be given first place. The pulse may be very slow. This is the exception. The pulse is usually high in proportion to the fever, allowing ten beats for each degree of fever, according to a reckoning often referred to. Myocardial changes may be suspected if the rate exceeds this proportion for any length of time. This suspicion is deepened if to the constant high rate there are added periods of yet more rapid heart beats with cyanosis and restlessness. The explanation of these so-called "runs" of the pulse, or "heart slumps," as I have called them, is either dilatation of the heart or vasomotor paresis, or both. The heart is sometimes found dilated; the blood pressure is low; sweating is common, and the surface dusky. An increase in the precordial dulness, weakening of the sounds, reduplication, with or without cardiac murmurs, are all signs to be reckoned with in the evidence for or against myocardial mischief.

A few observations of the pulse and heart in pneumonia may be found of interest. A sudden drop of the pulse rate from 110 to 48 with no serious after-results was recently observed in two patients. Irregularity in the pulse, regarded by McKenzie as an ominous sign, has been followed by recovery on several occasions. On this subject McKenzie relates his experience in these words, "In all cases of acute lobar pneumonia that I have met when the pulse showed an occasional irregularity before the crisis was reached, death supervened." Hyperdicrotism preceding death was noted in one case.

Examples of post mortem results found in the hearts of those dead from pneumonia showing dilatation are not uncommon. Dr. Percy Kidd in the London *Lancet* of recent date states that the post mortem examination of the heart in cases of pneumonia is striking on account of the almost invariable absence of dilatation. The heart muscle seldom shows any gross disease, and this suggests that fatal circulatory failure is mainly due to exhaustion of the vasomotor centres. We have gone over several autopsy reports, and have found—right auricle dilated; tricuspid admits five fingers, or four fingers; muscle fibres swollen; striation obscure; vessels congested; numerous thrombi composed of diplococci among the muscle fibres; fat globules in papillary muscle—among the pathological findings.

The typhoid cases which have been selected illustrate a few of those serious features of disturbed circulation above enumerated. That there may be no sign whatever of approaching danger and but little post mortem evidence explaining the death, is illustrated in one of our cases. The patient was a male, forty-five years old. The pulse was not rapid (80 to 100), and the heart sounds were clear. On the thirty-second day of the illness which to this date had progressed without event, while his temperature was yet between 98.5 degrees and 99.8 degrees, he complained of pain over the upper part of the sternum; the heart's action became irregular and weak, and he died within a few hours. The post mortem showed a small pericardial effusion. The heart was dilated, yet not conspicuously so.

In contrast to this case the main points in three other cases of typhoid fever may be recorded.

CASE 1. No. 15854. Male, aged twenty-two. Admitted on the twelfth day of disease with pulse of 118, regular and of fair tension. On the sixteenth day, the pulse was 124 to 140, of low tension and diminishing volume. A systolic murmur was heard for the first time at the heart apex. On the nineteenth day the second sound was reduplicated, the pulse 120 to 130; twenty-second day, pulse 140 to 160, weak; twenty-third day, death. The post mortem showed myocarditis, with cloudy swelling of the adrenals.

CASE 2. No. 14360. Male, aged twenty-five; admitted early in disease with pulse of 86. No cardiac enlargement and no murmurs. The pulse rarely reached 100. The blood pressure was 110 to 98. On the fifteenth day of the disease, a mitral systolic murmur was heard. On the twenty-fifth day the temperature was

subnormal. On the thirtieth day, after a week without fever, the patient died. The post mortem showed cardiac dilatation, with dilatation of the tricuspid and mitral orifices; and cloudy swelling of the heart muscle.

CASE 3. No. 16693. Male, aged twenty-two. Early in the disease the pulse was 88. On admission there was an apical systolic murmur. Towards the end of the third week the pulse showed numerous "runs," during which it was almost impossible to make out the rate. The patient was restless and often drenched with perspiration. The blood pressure ranged from 110 to 120. Death came on the twenty-fourth day. The post mortem showed dilatation of the heart chambers, fatty changes in the papillary muscles, and an acute verrucose endocarditis of the mitral and tricuspid valves.

SLOW PULSE RATE. A young student ill with typhoid fever of mild type showed during the febrile period an extraordinary pulse rate of 48 per minute. It was thought that partial heart-block, due to the active infection, might explain the slowness of the pulse, but a careful analysis of the tracings by Dr. Moffatt failed to support the suggestion. A similar condition supervened in a youth of twenty years of age, two days after defervescence from typhoid, during the course of which the pulse rate had seldom gone above 90. On the evening of the twenty-second day of the disease the nurse, while counting the pulse, was struck by its small volume and a rate of 48 to 50 per minute. During the next two weeks the pulse rate ranged between 50 and 68, and on discharge a few days later, a record of 80 per minute was entered. He made no complaint.

TREATMENT. In all cases such as we have been considering, the indications are to lessen the toxæmia and to support the failing circulation. To carry out the second indication, due attention should be given in all cases to nutrition, fresh air, oxygen, and rest. Thus, to some extent at least, the depressing effects of toxins are diminished. The danger to the heart is from over-work, on account of the increased rate on the one hand and the weakening of the heart muscle on the other, while a yet greater danger threatens the heart and the general vascular system—vasomotor paralysis.

The present teaching is against the use of digitalis in acute infections, chiefly, however, it would appear, on account of its depressing action on conductivity. As there appears to be doubt cast by recent observers on the teaching that digitalis raises the blood pressure, its action upon peripheral vessels does not warrant its use.

The heart rate may be reduced by local applications of cold to the præcordium. Hydrotherapy often induces rest and sleep, and on this account it is to be recommended in the form of cool sponges, baths or packs. The cool pack or sponging tends to raise the blood pressure, yet this increase is temporary. One might be tempted to ascribe to the cold the good results of the treatment of pneumonia in the open air in our northern winters. Ballinger's observations on the effects of cold air on the circulation in pneumonia go to show, however, that while the pulse is slowed in a fair proportion of cases, the blood pressure is rarely increased while undergoing cold open-air treatment.

The drug treatment in these cases is far from satisfactory. Strychnin is in vogue, but there is but little experimental evidence to explain its use. I cannot point to a single case in which I have seen any result that could be attributed to the use of strychnin. The best of authorities teach that strychnin acts upon the respiratory centre, and as such a stimulant, it may indirectly aid the circulation. The use of alcohol in doses proportionate to the gravity of the case has much to condemn it. Alcohol is a vasodilator, and already the blood pressure is low and the heart rate too fast. Camphor and caffeine are much used and may be of temporary advantage.

The use of normal saline intravenously has been followed by a pulse of better volume and a blood pressure a few degrees higher, and when to this adrenalin has been added, a more marked change has been noted in the blood pressure. From what has been observed while using saline and adrenalin, one may say they are agents for good, and yet at the same time there is danger of giving too much for the heart to do, by increasing the volume of the blood and constricting the peripheral vessels. Of strophanthin I have had no experience.

### A SERIES OF CASES OF SMALL-POX, WITH SOME REMARKS ON DIAGNOSIS AND VACCINATION

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**I**N preparing a short paper on the above subject, anything I have to say will be practical, rather than scientific, based almost entirely on the experience gained during the last four years.

As a preliminary, a history of fifty-eight cases coming under my notice since January 1st of this year may be of interest. As regards age, they are divided as follows:—1 to 10 years, 7; 11 to 20 years, 8; 21 to 30 years, 20; 31 to 40 years, 15; 41 to 50 years, 5; 51 to 60 years, 2; over 60 years, 1. This indicates very clearly that no period of life is exempt to any degree, as is the case with many of the other infectious diseases. As regards sex, there were forty-three males and fifteen females. The preponderance of males is due to many factors, mainly to the greater opportunities for acquiring infection afforded males by reason of their associations and employments, and the great excess of males over females in the community.

Of the total, only five were school children, all of whom came from Edmonton South, where, previous to amalgamation, vaccination had been sadly neglected by the school board. In addition to these five, there were at least six more from the same part of our city, who had recovered before being discovered. In these cases the development of rash had been so slight as to cause the disease to be regarded lightly, and no precautions whatever were taken or quarantine imposed. In some cases it was regarded as chicken-pox, and owing to the general ignorance of the law which seemed to prevail concerning the disease, no report was made to the health department. It was only after these children had infected their unvaccinated parents and other adults, who developed the disease in a much more pronounced degree, that the true nature of the disease became apparent, and that through reports of physicians, sadly belated in many cases, the health department found it possible to deal with the situation.

Of the fifty-eight cases, eighteen were either from the south

side, or due to exposure to cases walking at large there, and it is probable that as many more, principally children, had the disease and recovered without any report or quarantine. Fortunately the disease, especially in the children, was exceptionally mild, otherwise the toll exacted among the large number of unvaccinated children might have rivalled the epidemic of 1885 in Montreal, when of 3,164 deaths, 2,717 were of children under ten years of age. The carelessness and indifference of the school board in Strathcona in failing to exercise the authority given them by the provincial Health Act regarding vaccination of school children is most discreditable.

Too much credit cannot be given to the school board of Edmonton and to the teachers for the last four years, in so loyally and energetically backing up the recommendation of the health officer, and in furthering his efforts to effect a thorough and complete vaccination of the children attending school. For these four years not a single case of small-pox has occurred in a pupil attending our Edmonton schools, though many of them were exposed to infection on different occasions.

Of the total of fifty-eight cases, fifty had never been successfully vaccinated, though in a few the attempt had been made. Of the eight vaccinated cases, all had been vaccinated in infancy, and most of them had only one mark. None of them were under twenty years of age. Their ages were 62, 54, 41, 39, 35, 27, 24 and 22. Of these, only the eldest, 62, had the disease in a severe degree, and those aged respectively 41, 39, and 24, had the disease in so slight a degree as regards the rash, as to be scarcely recognizable. Indeed, in one of them, I was threatened with a suit for damages by an irate lady, who thought I had subjected her husband to great danger and hardship unnecessarily, and on a mistaken diagnosis. One of the eight, aged thirty-five, had an attack of very moderate severity, but unfortunately had a pustule on the cornea which has resulted in total blindness of the eye. Of these eight, the one aged twenty-seven, was not a case of small-pox in my opinion, but probably of syphilis. Of the fifty unvaccinated previous to the attack, three were vaccinated after exposure, but too late to prevent development of the disease, which, however, was greatly modified by the concurrence of the vaccination vesicles with the appearance of the true small-pox eruption in a few spots. These usually appeared on the face only, but in one—a boy eight years of age—the spots appeared only on the wrists. In these cases vaccination was effected six to nine days after exposure to

disease. One school girl of fourteen was at first thought to have been successfully vaccinated, but further development of the vaccine vesicle showed it to be spurious. She developed the usual mild attack noted in the school children. The source of infection in the great majority of these cases is known, and indicates beyond a doubt that the infection in small-pox, just as in the other exanthemata, is chiefly derived from personal contact with the disease itself, and not communicated by carriers or from infected inanimate objects or things. If small-pox were as easily contracted as is popularly supposed, from air infection, and from contact with any article in a room through which the patient may have passed, or in which he may have stood, sat, or slept, and if all the elaborate directions as to disinfection and quarantine enjoined by the board of health regulations, which, owing to conditions existing in many cases, can be but imperfectly carried out, were justified by actual experience, there would be, after the lapse of time, only two classes of citizens in Edmonton: first, those protected by vaccination; and, secondly, those who had become protected by contracting the disease itself without falling into the hands of the undertaker.

As regards source, these cases may be classified as follows: Source unknown or undiscovered, 13; from the General Hospital case of January 19th, admitted as a case of grippe, 13; from some undiscovered case working at the McCauley Street school, 3; from the one of these three who subsequently developed the severe corneal ulcer referred to, 2; from untreated and undiagnosed cases in a family in Edmonton South, about February 20th, 15; from a case at the St. Elmo Hotel, undiagnosed by the physician in attendance, 5; from cases returned from Ontario, not completely cured and regarded there as chicken-pox, 3; from exposure to cases incorrectly diagnosed in a railway camp at Morinville, 3; doubtful case, probably not small-pox, 1.

In dealing with the different premises from which a case has been removed, I have followed the course of depending almost altogether on vaccination of the exposed persons, where not fully protected by recent successful vaccination and disinfection of the rooms to which the patient had had access, especially the bedroom, rather than that of putting on a rigid quarantine for sixteen days so frequently resorted to in dealing with small-pox. This latter, in my opinion, need only be resorted to when the individuals exposed cannot be depended upon to remain under observation from day to day during the development of vaccination. Daily visits by

the health officer until all vaccinations have been ascertained to be successful or from fourteen to sixteen days in case any have failed to take on the first attempt, will in such cases quite sufficiently protect the public, without imposing any hardship or financial loss on the owner of the premises involved or its inmates. I am free to confess that I am possibly open to criticism in following this course, but I have yet to learn of any secondary cases which have resulted from following this method, and which could have been, or would have been, prevented by imposing the sixteen days' rigid quarantine, with ropes and special police thrown in.

In the diagnosis of this disease, the preliminary symptoms so closely resemble gripe or typhoid, that many of the cases in this series were regarded by their friends and relatives, and in some cases by their physicians, as gripe generally, and typhoid occasionally. When small-pox is present in the community, the initial chill followed by lack of appetite, nausea, or actual vomiting with severe headache, and more or less severe backache, pains in the limbs, and fever, should cause the physician to think at once of the possibility of small-pox, especially if, on investigation, it is found that the patient has never been vaccinated. If, after these symptoms, even a limited number of small red spots (in some cases two to a dozen) appear on the forehead about the fourth day, there should be no hesitation as to the diagnosis. The case should be regarded as small-pox, and in the interest of the public removed to the quarantine station or to the small-pox ward. If there is a shadow of doubt, the patient should be vaccinated as an additional safeguard. Hesitancy and delay in reporting such cases to the health office have been responsible for the majority of the cases in the series, and have cost the city of Edmonton very dearly during the last six months.

When the rash has appeared and is mild in character, and when the preliminary symptoms have not been very severe, the diagnosis from chicken-pox, especially in children or young adults, may be extremely difficult or impossible. If unvaccinated and over sixteen years of age, the case will, in the vast majority of instances, be found to be small-pox, and should be regarded as such if the public is to be protected. Again, the immediate vaccination of the patient should not be neglected as a precautionary measure. From the standpoint of a medical officer of health, it is not at all a serious matter to mistake chicken-pox or gripe for small-pox, as compared with the dire results which may follow to the community at large from failing to diagnose a genuine case of small-

pox, and having it removed to a hospital as a case of grippe or typhoid. From the standpoint of the general practitioner, it is perhaps different, however, since he feels his first duty is towards his patient rather than towards the public.

As regards vaccination, the method I have found most satisfactory after performing the operation some five thousand times, is as follows: cleanse the area close to the deltoid muscle with alcohol, allow it to dry by evaporation, squeeze out one small droplet of glycerized lymph in three spots, forming the angles of an equilateral triangle of approximately one inch to a side, then gently scratch through each droplet with the point of a sterilized needle, an area not more than one-eighth of an inch long by one-sixteenth wide, until the slightest tinge of colour appears, taking care not to draw blood. This method rarely fails, and produces three small vesicles which do not coalesce and which, if allowed to dry before the garments are replaced cannot become infected except through gross carelessness or scratching by dirty finger nails. Much greater danger of infection, in my opinion, exists where only one mark is made, as the area excoriated is usually made much larger and deeper than the total area of the three made in the manner indicated. By putting on the vaccine droplets first, only one scratching process is required, and it is much less trying to the patient on the moist surface than the dry. It is rare for a school-child to show any indication of appreciable suffering from the operation performed in this way, though unfortunately some of them present themselves in a pitiful condition of fright, expecting to see streams of blood follow the operation. As to the covering of the vaccination marks with corn plasters, wire cages, and other devices, I have acquired a great prejudice against such treatment, as I am satisfied, from results I have seen, that it is often productive of serious harm rather than of any benefit. Dressings and bandages, also, from the interference with the circulation, tending to displacement, taking with them the top of the vesicle, and leaving a raw surface, thus increasing the heat and itching of the part, are not to be recommended except when carelessness has resulted in infection and sloughing. A clean piece of linen loosely pinned or sewed into the shirt above, and falling loosely over the part, is the best treatment, if any is needed other than the wearing of clean garments, and the avoidance of scratching by the fingers.

As to the number of excoriations made, great variation is found. Most of the vaccinations effected in England before coming to Alberta show four marks, and it is remarkable how

rarely one sees a bad scar in these cases with four marks. Many parents request only one mark, under the impression that the inconvenience and danger from the operation is in direct proportion to the number of vaccine vesicles produced. Where the excoriations are made as minute as possible and well separated, this impression does not appear to be well founded. As to the protection afforded, it is evident that this is the more permanent the greater the number of scars. I have rarely seen a case of small-pox in a person who has had more than one mark, and it is noticeable how frequently re-vaccination fails in those who exhibit three or more scars from a previous vaccination. Osler, in his "Medicine," notes that the English vaccination report states that out of 4,754 cases, the death-rate with one mark was 7.6 per cent., with two marks 7 per cent., with three marks 4.2 per cent., and with four marks 2.4 per cent., and that W. M. Walsh's statistics of five thousand cases give with good cicatrices 8 per cent., with fair cicatrices 14 per cent., with poor cicatrices 27 per cent., post-vaccinal cases 16 per cent., unvaccinated cases 58 per cent.

Fortunately the virulence of the great majority of the cases of small-pox treated here is, up to the present month, less serious than in the two series to which these figures refer. Let us hope that the type of the disease commonly seen here will continue to be mild, with few fatalities; but of this we have no positive assurance, as is indicated by the virulent outbreak in Montreal so recently as 1885. Some epidemics during the century previous to this date exhibited the same remarkable mildness of symptoms and low death-rate we are accustomed to. Only one of the series related showed very serious symptoms, one of the cases contracted from the unknown case at the McCauley Street school. This man had a profuse eruption on the tongue, roof of mouth, and pharynx, and threatened to die from suffocation. Both he and his companion had the disease almost confluent on the face, and the latter was badly pitted, though at no time in any special danger. It is noteworthy that the third case of this trio, a man vaccinated thirty-five years before, was the patient referred to who lost the sight of one eye from a corneal ulcer.

It is not at all creditable to Anglo-Saxon civilization to state that among this series of cases there was not a single patient who was not born in Great Britain, Canada, or the United States. And yet we commonly hear the statement made by our so-called intelligent Anglo-Saxon, who prides himself on his cleanly person and habits, that it is little wonder we have small-pox when so many

unwashed foreign immigrants are coming into our community. They may need washing but they are almost invariably vaccinated and re-vaccinated.

When some four years ago the school board, acting on my advice, made a certificate of successful vaccination a condition of admittance to our schools, a strong opposition was encountered from a few anti-vaccinationists, two of whom wrote letters to the public press. To these I replied at length in two articles, which fully exposed the fallacies of the arguments and theories advanced, and as a result no more anti-vaccination protests have appeared, and the opposition to the carrying out of the law has practically died out. This is probably due, to some extent, to the fact that vaccination of the great majority of school children has been done free at the health office with uniformly good results.

There appears to be a disinclination on the part of health officers to reply to anti-vaccination articles in the public press, and I wish here to enter a plea in favour of publicity in this matter. Any health officer who chooses to take up the matter vigorously and exhaustively can quite easily convince the thinking public of the facts regarding vaccination, and it is unfortunate, in my opinion, that in some localities the laity should acquire so great a prejudice from the plausible literature published and circulated by anti-vaccination societies and individuals, while the medical profession, in the meantime, maintains a dignified silence on the subject, which is interpreted too often to mean that they cannot answer the specious arguments presented, and that in some curious way the profession of medicine is deriving a large income from the practice of vaccination. As long as we have so large a percentage of unvaccinated people in our community, so long will we have small-pox with us, with the heavy expense necessarily incurred by municipalities in keeping it under control. Continued and persistent enforcement of the present law of our province, making vaccination of school children compulsory, will have a good effect in time, in giving a large degree of immunity from attack, but compulsory vaccination and re-vaccination, as enforced in Germany, are the only measures which can effectively guard the community from frequent outbreaks of the disease. It is significant that Berlin has only twelve beds for small-pox in a pavilion of a general hospital, while London has to maintain 2,500 beds in hospitals specially constructed and maintained for small-pox alone.

## THE TREATMENT OF NÆVUS WITH SOLID CARBON DIOXIDE

By E. A. SMITH, F.R.C.S. (ENG.), VANCOUVER

THE idea of the therapeutic use of solid carbon dioxide seems to have originated with Dr. Pusey, of Chicago, in 1905. It was later used by Dr. Geyser, of New York, and communicated by him to Dr. Reginald Morton, of London, through whom I first became acquainted with it. The only literature dealing with the subject to which I have had access consists in articles in the *Lancet* and *British Medical Journal* by Drs. Reginald Morton and McLeod.

We have in carbon dioxide snow a means of applying intense cold to the body as extensively as we wish within limits. The temperature of the snow till it all disappears as gas, under ordinary conditions of atmospheric pressure, is constant at 79° C; at 78° C. carbon dioxide is a gas. Its solid state and the firm crayon which can be made from it are strong points in its favour, as its effect can be varied, according to the length of time of the application and the pressure exerted. These are obvious advantages over liquid air, which has been used for the like purposes, in addition to which may be mentioned cheapness and easy procurability.

My own observations are based on the treatment of forty-two patients with fifty-nine nævi at Paddington Green Children's Hospital, London, England. I am going to give some general impressions gathered from this experience, and describe the methods of application.

Of the fifty-nine growths, two were pigmented moles, one also covered with hair. Of the remainder, twenty-nine were capillary nævi, sixteen cavernous nævi, seven capillary and cavernous; of five the nature is not stated. Their situations were as follows: head and neck, twenty-eight; trunk and external genitalia, twenty-five; upper limb, four; lower limb, one; not stated, one. With the exception of six, all my patients were less than one year old; and this leads me to an important point in regard to the length of time of the application.

I found that an application of more than fifteen seconds in a child under two years old produced necrosis and ulceration, while one of fifteen seconds or less caused a blister only; and further, the

curative effect of the longer applications in these young subjects was not greater than that of the shorter ones, while the ulceration of course caused a cicatrix after healing, which was not the case where no ulcer was produced. On the other hand, in older children and adults longer applications must be made, from thirty to forty-five seconds, even more in some cases being necessary. As an instance of this, a big strapping girl of thirteen years had a large, scattered, pigmented mole in the left posterior triangle of the neck. Applications of thirty seconds had no effect in this case, and several of forty to forty-five seconds were required to cover the whole affected area. This case was cured, except in some scattered outlying parts, the cosmetic effect being a great improvement on the original condition, but the girl gave up treatment before the whole of the pigmented patches had been treated, because, I think, of the pain at the time of, and especially after, the application. The whole of the mole which had been treated was replaced by skin differing very little from the normal appearance, except that, up to the time she ceased to be under observation, there was a little excess of redness.

I find that my experience seems to indicate that a shorter application is required than Morton or McLeod state in their articles. This may be due to the fact that so many of my cases were in very young children.

The question of pain brings me to another point. I had a few small *nævi* about my own body; I suppose most of us have, somewhere or other. In order to test the treatment on myself, I got a friend to make applications, varying from thirty to forty-five seconds, to three of them. The result in all cases was satisfactory, except that in one my friend made a bad shot, and only covered half the *nævus* with the crayon of carbon dioxide, with the result that it is only cured as to that half. But the pain of an aching character, for some five or six hours succeeding the application, was not negligible. In my own case the *nævi* were situated on the abdominal wall, and in addition to pain there was a good deal of nausea—reflex, I suppose—only eventually relieved by the arrival of dinner time and a comforting warming application of another sort inside. I rather infer, however, that the pain is greater in some cases than others. Young babies can't speak, but they can nevertheless protest. Some do and some don't, when this treatment is applied, and some that do are soon quieted, while others continue to wail for some time.

Now a word as to the course of the case and treatment. After

an application of fifteen seconds in a child of, say, one year old, there is first seen a hard, white depression corresponding to the size of the crayon and the pressure exerted in the application. This soon thaws out, and the treated area gradually reddens and swells, while the *nævus* itself becomes harder and more purple. In two or three hours a blister forms, commensurate with the crayon of carbon dioxide used, while some *oedema* forms at and around the treated area, especially if near such a situation as the eyelid. I always gave instructions to carefully guard the blister from breaking, and to apply plenty of some simple, mildly antiseptic, dusting powder under a pad of cotton wool. Under this treatment the blister gradually shrivels and dries up, and in ten days to a fortnight the scab comes away, leaving the *nævus* in most cases cured, and very little mark at all. The cosmetic effect is really wonderful, far superior to that produced by electrolysis, while the treatment is simpler, and no anæsthetic is required. I found treatment by powder far superior to ointments, under which, in my hands, ulceration was more liable to occur, with consequent scarring.

Now I don't suggest that this treatment is the best for every case of *nævus*. For the flat *nævi* wherever situated, it is ideal. For raised cavernous *nævi*, if of small size, it is also extremely good, and some of my best results were among such cases; but for the large cavernous *nævi*, if feasible, I much prefer excision.

I would like to describe briefly two or three cases. I have already mentioned the large pigmented mole in a girl of thirteen years. The other pigmented mole was in a little girl, two years old, who was sent in to me by Mr. Burghard. The mole was situated on the left cheek, was pyriform in shape and measured one and one-half by one inches, and was covered with long fine hair. It was slightly raised and of a dark lemon colour. Three applications in all, of fifteen seconds each, were made to cover the entire area, a fortnight's interval elapsing between the treatments. The result was most satisfactory. The hair disappeared completely, also the pigmentation, the only mark left being a slight excess of redness as compared with the other cheek, such as one would have after a blister, and which would, I believe, entirely disappear in a few weeks. I did not have any opportunity of seeing whether the removal of the hair were permanent or not. If so, there may be a use for solid carbon dioxide as a depilatory.

Another case was a flat dusky *nævus* about the size of a 10-cent piece on the cartilaginous part of the nose. It was treated by a

single application of fifteen seconds, and I had difficulty in convincing a friend who saw the child on the day of treatment, and again a fortnight later, that he was really looking at the same child. Another young child had a raised cavernous naevus, occupying the greater part of the palm of one hand. One application of solid carbon dioxide with the largest sized crayon just covered the whole growth, and the result was a perfect cure in two weeks, so that it was impossible to say, if one had not known, which hand had been affected.

Among my cases were three or four in which the cure was not all one could have desired. One had a slight recurrence at the end of three months. This was cured by two subsequent applications at intervals of one month. One case of a mulberry-coloured, cavernous naevus on the right temple was very troublesome. It had been treated by electrolysis, and by the galvano-cautery, with but little improvement, and was subsequently treated six times with solid carbon dioxide. One application was of thirty seconds, and produced ulceration, and still the naevus was not cured, though the overlying skin was white. This child was under six months old.

I have noticed ulceration as a result of treatment in three cases. Two where applications of twenty seconds and one of thirty seconds were used, in children of fifteen, two, and four months respectively. These were among my earlier cases, and it never happened with applications of fifteen seconds or less.

My experience leads me to the conclusion that, at least in naevi and moles, the length of time of the application should be governed more by the consideration of the age of the patient than the kind or extent of the lesion. Adult tissues will stand with impunity an application which would inevitably produce necrosis and scarring in an infant. In the girl of thirteen years with the large pigmented mole, the first two or three applications of twenty to thirty seconds had no curative effect, while applications of forty-five seconds succeeded well. That the longer time required was not due to the nature of the growth is shown by the successful result of the treatment of a hairy pigmented mole on the cheek of a little girl of two years old previously mentioned.

One more point I ought to mention. A second application over the same area at the same sitting produces a far more violent reaction than a single one; so, in treating an extensive naevus, if two applications are made at the same sitting to different parts, care should be taken that they do not overlap.

My own experience has so far been confined to the treatment of *nævi* and moles. The treatment has, however, been used with success for warts, for which a long application is required; also for superficial rodent ulcers, for which it appears to be equally as good as radium, and much cheaper; and for lupus erythematosus and lupus vulgaris, where the lesions are superficial. I believe it has been used for hæmorrhoids, but have been unable to find the reference to the cases. I have not had the opportunity to treat a large port wine stain yet. Morton reports good results and McLeod a want of success, in such cases.

**CONCLUSIONS.** The use of solid carbon dioxide is a valuable addition to our armamentarium for the treatment of *nævus*, moles, and some other superficial conditions.

The application should be made, several at intervals in extensive cases, for not more than fifteen seconds in children up to two years old, and for as long as forty-five seconds, or even more, in an adult.

No anæsthetic is necessary for the application, which is comparatively painless, but pain during the thawing out and for possibly some hours afterwards, is sometimes considerable.

In the after-treatment a drying, mildly antiseptic powder with a pad of aseptic wool, is preferable to ointments, under which there is more tendency to ulceration and greater difficulty in maintaining asepsis.

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LARGER doses of anti-toxin are now administered to patients in the Toronto Isolation Hospital. The doses given range from ten thousand to twenty thousand units and the results have been most satisfactory. Although the usual number of cases of diphtheria and scarlet fever were treated in the hospital, not a single death occurred as a result of either of these diseases during the month of September.

## TICK BITE IN BRITISH COLUMBIA

BY JOHN L. TODD, M.D.

*Associate Professor of Parasitology, McGill University, Montreal*

A VERY fatal disease, with symptoms closely resembling those of typhus fever, occurs in some parts of Montana. The disease is known locally as spotted fever, or tick fever. It is called tick fever because it is transmitted by the bites of a tick. When it became known that this tick, *Dermacentor venustus*, exists in Southern British Columbia, inquiries were instituted with the object of learning whether the disease which it transmits in Montana also exists in Canada. With this object, letters were sent out in the middle of April of this year to a number of doctors practising in Southern British Columbia. The replies received from them were so interesting that more letters were sent out to medical men in British Columbia and in the neighbouring states and provinces. Altogether two hundred and ten letters were sent out to ask physicians if instances of ill effects following tick bites, or of a disease resembling spotted fever, had occurred in their practices. In all, forty replies were received. Many of those who replied had seen cases in which infection of the wound caused by a tick bite had been followed by local inflammation that was sometimes very severe. Six letters mentioned instances in which the bites of ticks had been followed by paresis, or paralysis, and, sometimes, by death. The symptoms reported in these cases are quite unlike those which occur in the tick fever of Montana.

Dr. S. B., Fernie, B.C. About 1898, at Rossland, two infants died in convulsions; wood ticks were found on the necks of both.

Dr. G. C. E., Rosedale, B.C. In June, 1910, a child four years old, had almost complete paralysis of the legs. A large wood tick had been taken from the nape of the neck a few hours before the doctor's visit. After a purge and a few hours' rest the child completely recovered.

Dr. G. B. H., Creston, B.C. A girl of four years gradually lost the use of her legs, during two or three days, until she was unable to stand. A tick was removed from the nape of the neck and within three days the child was well again.

Dr. G. B. H., Victoria, B.C. About 1900, at Nelson, B.C., a child of five years of age was bitten on the back of the head by a tick. The patient died in convulsions. Dr. H. is very certain that the wood tick causes symptoms and that there is no possibility of confusing these symptoms with those caused by infantile paralysis.

Dr. C. M. K., Grand Forks, B.C. About 1904 a child of four years had complete paralysis of the legs and a lesser degree of paralysis of the arms. A wood tick was removed from the nape of the neck and rapid recovery resulted. Dr. K. knows of two or three such cases.

Dr. O. M., Vernon, B.C. January, 1912. A healthy child, three and a half years old, had been perfectly well until two hours before examination; when the patient was seen there was no temperature and the pulse was normal, but the legs were almost completely paralyzed. The child could not stand and the reflexes were gone. A tick was found, firmly attached to the base of the neck; it was removed. The paralysis continued during the day; next morning there was a slight improvement and by the evening the child had recovered the use of her legs. Dr. N. also knows of an instance in which an adult complained of weakness of the legs after a tick bite on the back.

Dr. W. O. R., Nelson, B.C. About 1900 a child died suddenly with symptoms of acute ascending paralysis. After death a large tick was found at the nape of the neck. In 1901 a second child with the same symptoms died, after an illness of two days. A tick was found attached to the right temple. The knowledge of these two cases suggested the presence of a tick when a third child, previously very healthy, was seen, whose legs had been becoming weaker for two days. One was found at the nape of the neck; it was removed and in two days the child was quite well again. On April 10th, 1912, a little girl of three had become paralyzed. The legs were completely paralyzed and the reflexes were gone; paresis of the arms was marked. Three ticks were removed from the nape of the neck and the child recovered completely.

Dr. D. R. S., Vancouver, B.C. At Rossland a child of three or four had paralysis of the legs with absence of reflexes. A tick was removed from the neck and the symptoms disappeared.

Dr. Seymour Hadwen, of Agassiz, B.C., has heard of two cases in which the symptoms of paralyzed children disappeared after the removal of ticks. One was in Ashcroft, and the other in Bella Coola.

Judging from some of the letters received, a belief that the bites of ticks may cause paralysis is quite common in some parts of British Columbia.

A consideration of these reports makes it seem very probable that severe symptoms may follow the bites of ticks in British Columbia. Children seem to be most affected. In them, paresis and paralysis of the extremities, especially of the legs, are the most constant symptoms; and when such symptoms are seen ticks are usually found about the patient's head. It was not known that the bites of ticks could produce such symptoms.

These notes are made public in the hope that they may induce physicians who have seen or who may see similar cases to publish their experiences; for it seems possible that an undescribed disease, caused by ticks, may occur in British Columbia. The subject demands investigation; the writer would welcome information and material concerning it. Living ticks, removed from children in whom their bites had caused paralysis, would be especially valuable.

## Case Reports

### HEMIPLEGIA IN TYPHOID FEVER

**H**EMIPLEGIA occurring during typhoid fever is a sufficiently rare event to warrant the publication of additional cases when possible. The most exhaustive article on the subject is that by Smithies, published in 1907 (*Jour. Am. Med. Assoc.*, Vol. 49, p. 389). He there reports and tabulates forty-three cases reported in the literature to that date. More recently Williams (*Am. Jour. Med. Sciences*, Vol. 143, p. 677, May, 1912) reports four cases in addition.

The main features of my case are as follows: W. P., a Scandinavian, aged thirty, was admitted to the medical service at the Vancouver General Hospital on September 16th, 1911, having been ill for a week. The diagnosis of typhoid fever was confirmed by a Widal reaction. For six days the disease ran a mild course, the temperature gradually declining. On the evening of the twenty-second, he was slightly delirious and had an involuntary action of the bowels. He slept well that night. When roused at six o'clock next morning (fourteenth day of illness) for nourishment, he had difficulty in swallowing, and two hours later the left arm and leg were found to be paralyzed. The patient was conscious, rational, and able to speak. On the twenty-fifth he swallowed his food more easily and there was some evidence of returning function in the leg. During this time the temperature had been rising to a maximum of 104°, pulse 108. On the twenty-eighth, he had a large hæmorrhage from the bowel, followed during the next two days by six others. He died on October 3rd, on the twenty-fourth day of illness and the tenth after the onset of paralysis, having been unconscious for some hours.

A complete autopsy was made by Dr. Cumming, assistant pathologist to the hospital. The usual signs of typhoid fever were present in the abdomen, the heart was normal. The brain, after removal, was found somewhat flattened over the right parietal region, in which area there was also slight thickening of the meninges. On section, a softened place was found on the right side involving the greater part of the second and third frontal and the ascending

parietal convolutions, part of the supra-marginal and angular gyri and the upper part of the temporo-sphenoidal lobe. In size about that of a small orange, this area was of a dirty yellowish-grey colour and very soft. There were no cavities. The left side of the brain was normal, as were also the basal ganglia and internal capsule on both sides, the cerebellum, pons, and medulla.

The right middle cerebral artery was found to be completely blocked for about one inch after entering the sylvian fissure. The artery was thickened and its lumen filled with a firm semi-fibrosed substance adherent to the walls. The thrombus began at a point beyond the arterial radicals, going to the anterior perforated spot, and extended a short distance into each of the terminal branches of the artery.

J. M. PEARSON.

Vancouver.

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At the Cleveland Convention of the Great Lakes International Pure Water Association, which took place October 24th, Dr. Charles J. Hastings, of Toronto, was chosen president of the association. The vice-president is Dr. Guy Kiefer, Detroit, and the secretary-treasurer is Dr. Paul Hanson, Chicago. Dr. C. E. Ford, Cleveland, is chairman of the executive committee, and Dr. H. A. Whittaker, Minneapolis, is the editor for the association. The next meeting will be held at Toronto. The pollution of the Great Lakes was discussed at the Cleveland meeting. The Canadian members who were present were in favour of a general law, both in Canada and the United States, which would forbid the discharge of sewage into the lakes. On the other hand, Dr. A. J. McLaughlin, of the United States Government Health Service, considered that the purification of the water of the lakes would be a cheaper and also more efficient method of dealing with the question.

## Editorial

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### SANITATION IN QUEBEC

**S**OMETHING less than justice was done to Quebec in the October issue of the JOURNAL. In an editorial dealing with the public health of Ontario it was stated that Ontario, having divided its territory into sanitary districts, Quebec followed the example; but while the nominations were made in Ontario in the province of Quebec no inspectors were yet in the field. In reality the province of Quebec was the first of the provinces of Canada to propose the division of its territory into sanitary districts each in charge of an inspector, a report upon the scheme having met the approval of the Provincial Board of Health, December 9th, 1910. During the month of January, 1911, the Provincial Board of Health interviewed the government on the matter but asked the government not to make the nominations until the universities should have time to qualify physicians for the positions, the board desiring to employ only men who had secured a diploma in public health. On April 3rd, 1911, Sir Lomer Gouin, the premier, notified the board that the proposal had received approval and a subsidy would be available from July 1st, 1912, the date the board had stated as giving sufficient time for special courses at universities. From October, 1911, to June, 1912, the desired special courses were given in the three universities of the province, and in July last the board was enabled to notify the government that seven candidates had secured the diploma in public health and, in addition, had subsequently passed a provincial supplementary examination to test their administrative fitness for the duties of a district inspector. The appointments are promised in the immediate future. From the above facts,

we feel sure that all will admit that the delay in carrying out the arrangement was due to prudence, and is calculated to secure a better service, and that the idea of giving the positions to professional sanitarians only will be fully appreciated by the profession.

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### HOSPITALISM

**P**ROBABLY few students, or physicians of the younger generation, know the meaning of the term "hospitalism." Happily, the condition it signified is a thing of the past. The wonderful progress of modern surgery is intimately associated with the improvement and multiplication of hospitals in recent times, and it is difficult to realize that less than fifty years ago the horrors of the surgical wards, their appalling death rate, the inevitable suppuration and its stench, pyæmia, "hospital fever," in a word, *hospitalism*, threatened to banish the practice of surgery from hospitals altogether.

An impressive account of those days of discouragement in the decade before the coming of Lister, is given by Sir Hector Cameron, the distinguished emeritus professor of surgery in the University of Glasgow, in his recent address at the opening of the session of the Toronto medical faculty. Lister was of our own times, his beneficent life lasting into the present year; and the history of the fundamental revolution which he wrought in surgical treatment is familiar to all. But not so well known is the earnest work in this connexion of another great benefactor, Sir James Simpson, to whom we owe chloroform anæsthesia, and who conducted, during the sixties, an untiring crusade against the evils of hospital segregation.

His remedy was to change the hospitals "from being crowded palaces—with a layer of sick in each flat—into villages of cottages with one or, at most, two patients in each room. . . ." And, indeed, when he could collect reliable

statistics, showing that in two thousand amputations in the large hospitals of London, Edinburgh, and Glasgow, no less than forty per cent. of the patients died, while in the same number of amputations performed in rural districts or private houses all but ten per cent. recovered, one must admit that he had reason on his side. Fortunately, when the truth was made known, the remedy proved infinitely more simple and efficient.

Lister would often refer with satisfaction to the excellent training he had received in the preliminary scientific subjects, chemistry, physics, and biology; and this led Sir Hector to discuss the question of the congestion of the medical curriculum. He deprecated the proposal of certain reformers that the teaching of these subjects should be relegated to the school years, and suggested that relief should be sought for the overworked student in lessening the number of examinations rather than that of the subjects of study, which now find a place in the curriculum. We can sympathize with the applause which must have greeted this suggestion.

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#### MEDICAL COUNCIL OF CANADA

THE first meeting of the Dominion Medical Council was held in Ottawa, November 7th. The Hon. Dr. Roche attended on behalf of the government, and the following representatives of the profession in Canada were present: From the various provincial councils: Ontario, Drs. W. Spankie and R. J. Gibson; Quebec, Drs. L. P. Normand and Arthur Simard; New Brunswick, Drs. W. W. White and A. R. Atherton; Nova Scotia, Drs. John Stewart and A. W. H. Lindsay; Prince Edward Island, Drs. S. R. Jenkins and Alexander MacNeill; Manitoba, Drs. R. S. Thornton and J. S. Gray; Saskatchewan, Drs. W. A. Thompson and A. MacG. Young; Alberta, Drs. R. G. Brett and John Park; British Columbia, Drs. R. E. McKecknie and R. E. Walker. From the universities:

Dalhousie, Dr. D. Fraser Harris; Manitoba, Dr. J. R. Jones; Queen's, Dr. J. C. Connell; Western, Dr. H. A. McCallum; Laval, Montreal, Dr. E. P. Lachapelle; Laval, Quebec, Dr. J. Dagneau; McGill, Dr. F. J. Shepherd; Toronto, Dr. J. M. McCallum. Representatives of Governor-in-Council: Dr. T. G. Roddick, Montreal; Dr. Walter Bapty, Victoria; Dr. G. A. Kennedy, Macleod, Alberta. Homœopathic practitioners, Dr. E. A. P. Hardy, Ontario; Dr. C. E. Sugden, Manitoba; Dr. Morgan, Quebec.

After an eloquent reference to the history of the Canada Medical Act the minister called upon the meeting to appoint its officers. Dr. T. G. Roddick was unanimously elected president; Dr. R. S. Thornton, of Deloraine, Manitoba, vice-president; and Dr. R. W. Powell, of Ottawa, registrar. It was understood subsequently, however, that Dr. Powell would not take official control until the next meeting.

An executive committee was formed consisting of the president; vice-president; Drs. Normand, Spankie, McKecknie, Hardy, and Stewart. This committee subsequently met and nominated standing committees to be appointed annually.

It was thought well to make the education committee a large and representative one, namely, all the university members and the following: Drs. Walker, Brett, Thompson, Thornton, Gibson, Normand, White, Lindsay, Jenkins, and Morgan, with J. C. Jones, convener. Much work was done by this committee with reference to examinations especially, but no definite conclusions were reached. A majority, however, favoured the holding of examinations in two or more of the university centres; and with reference to the subjects of examination these in all probability will be anatomy and physiology only of the primaries, and all the final branches.

After a sitting of two days and a half much work of organization was accomplished, the rules and regulations committee, under Dr. Bapty, being especially active; but as all rules and regulations have to be submitted to the Governor-in-Council before they can be acted upon, and as many

matters of importance still remained to be done, it was decided to adjourn until June next. In the meantime, a committee composed of the president, Drs. Gray and Lindsay, kindly consented to put into proper form the work already done by the various committees, and to prepare a complete set of regulations which, being first approved by the council at its next meeting, will be submitted at once to the Governor-in-Council.

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#### DEPARTMENT OF PUBLIC HEALTH

**T**HE following resolution was passed at the annual meeting of the Canadian Medical Association at Edmonton in August last: "That the Canadian Medical Association at this its forty-fifth session desires again to call the attention of the Dominion government to the urgent necessity of creating a department of public health for the Dominion, to be administered by one of the existing ministers of the crown; such department to take cognizance of all matters of sanitary science and public health now administered through several separate departments at Ottawa and coming within the powers allotted to the Federal authorities by the British North America Act. The Canadian Medical Association for many years past has brought this subject to the attention of the Federal authorities by formal resolution, and now wishes to reiterate its opinion that Canada as a nation, or self-governing Dominion, is not abreast of the times, and is not acting in consonance with progressive civilized countries. That sanitary science and public health with all that appertains thereto is of the utmost importance to the well-being of the nation, and it is of far greater importance to guard the health and best interests of the inhabitants of any country than to make laws simply to prevent the entrance of disease through immigration. That this association is only actuated in this matter in what it conceives to be the best interests of Canada as a whole. That a copy of this resolution be submitted to the Hon. the Secretary of State for submission to the

Hon. the Privy Council for Canada; to the Right Hon. the Prime Minister, and to the Hon. the Minister of Agriculture, accompanied by a request that the whole question be taken at an early date into the earnest consideration of the government of Canada."

In consequence of this resolution, a deputation consisting of Dr. McCallum, the president of the association; Dr. R. W. Powell, Dr. Lachapelle and Dr. J. Stewart, waited on the Premier on Friday, November 8th. The deputation was well received and was assured that the matter would have careful consideration, that the government realized the importance of the scheme as outlined, and would do all that was possible to ensure for Canada its rightful place in this respect among the leading nations of the civilized world. The association might rest assured, the Premier added, that when the government felt that the time was ripe for the creation of a public health department, nothing would be left undone to secure its successful working in the best interests of the Dominion.

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### HOSPITALS IN SOUTH AFRICA

**A**N ordinance bearing on the subject of state-aided hospitals passed through the provincial council of the Cape, July 15th, 1912, and will come into effect March 1st, 1913. The measure is highly commended in the *South African Medical Record*, of July 27th, and is a matter of great satisfaction to confrères in South Africa. The principles embodied in the ordinance, so far as the purely medical aspects are concerned, are those laid down by the South African Congress in 1910. Hospital districts are to be constituted in which there will be at least one state-aided hospital or dispensary. A hospital board will be established for each district, which will have the control of all hospitals within the particular area—the board to consist of from six to thirty-six members, according to the size of the district, whereof one-third will be elected

by the contributors at the annual general meeting and one-sixth by the honorary visiting medical officers, or by the administrator. The term, "honorary visiting medical officers" is defined as "registered medical practitioners who hold medical appointments at institutions under the control of a board and who are not in receipt of any salary, fees, or emoluments from such board." Monthly meetings of the board will be held, which will be open to the public. The patients are to be divided into two classes—"paying" and "non-paying," the former to have the privilege of calling in their own medical attendant. As the payment of fees involves the opening of the hospital to all medical men, it is probable that, wherever practicable, certain hospitals will admit paying patients only, while others will restrict themselves to free patients. The hospital board possesses authority to establish new institutions or close those already established in a district, provided the consent of the administrator has been given. A medical inspector of hospitals and charitable institutions, who will assist in the administration of the ordinance, will be appointed and committees of management established. A government subsidy will be paid to each board; namely, thirty shillings for every pound contributed, other than by bequest; one pound for every pound received in fees from patients; and one pound for every pound bequeathed. In the case of bequests, however, the grant may not exceed £500. Should there be a deficit and the administrator is satisfied that the board has made reasonable efforts to collect the money by voluntary contributions, he shall authorize the payment of such deficit out of moneys appropriated for this purpose.

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A SOMEWHAT interesting point has arisen at Vancouver in connexion with the medical inspection of school children. The question at issue is whether the school authorities have the power to permit a medical inspector to perform minor operations on the children examined by him, should he con-

sider such to be advisable. It is contended that the practice, if adopted, would interfere with the work of the private practitioner.

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ON Monday, October 14th, an outbuilding situated in the rear of the Ottawa General Hospital took fire. The fire was not extensive and was quickly extinguished. This incident is a forcible reminder that all hospital buildings should be fire-proof. It is easy to imagine the harmful effect on patients of such an occurrence, and the knowledge that the building was in no way fireproof largely increased their fears. In such a case, the mere fact that the building was known to be fireproof would afford much consolation to those unable to save themselves in case of fire.

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AT the meeting of the Federal Committee of the British Medical Association in Australasia, held in Melbourne in May last, it was proposed that the branches of the British Medical Association in the several states of Australasia should jointly own and conduct a weekly paper and combine to acquire the interests of the New South Wales and Victorian branches in the *Australasian Medical Gazette* and the *Australian Medical Journal*, their respective official organs. The proposal is now under consideration by the several branches.

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THE American Surgical Association has appointed a committee consisting of Drs. William L. Estes, South Bethlehem, Pa.; Thomas W. Huntingdon, San Francisco; John B. Walker, New York; Edward Martin, Philadelphia; and John B. Roberts, chairman, 313 S. 17th Street, Philadelphia, to report on the operative and non-operative procedure of closed and open fractures of the long bones, and the value of radiography in the study of these injuries. Surgeons, who have published papers relating to this subject within the last

ten years, will confer a favour by sending two reprints to the chairman of the committee. If no reprints are available, the titles and places of their publication are desired.

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COMPULSORY notification of cases of pulmonary tuberculosis has been in force in certain districts of Scotland since 1906. Experience gained in this way has proved that the difficulties anticipated in connexion with such notification do not occur in actual practice. Consequently it has now been made compulsory throughout the whole country. Notification forms are supplied, and the local authority is required to pay the physician the sum of two shillings and sixpence in respect of each notification sent in by him. It is now almost universally recognized that the accurate information furnished to public health authorities by compulsory notification, is an indispensable preliminary to effective and complete preventive measures against the disease.

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THE first general meeting of the State Medical Service Association, which was inaugurated at Liverpool in July last, was held in London, October 25th. One hundred and thirty-five medical men have become members of the association. An address was given by Professor Benjamin Moore, Liverpool, who was in the chair. The aim of the association, as outlined by Professor Moore, is to educate the medical profession and the public to the need for a State Medical Service, which will give advice when needed to any member of the community with the purpose of preventing disease. Arrangements were made for the formation of district branches of the association, and an executive committee appointed, of which Dr. G. A. Heron is the chairman. It was also decided that a weekly journal, to be entitled *The Medical World*, should be issued, which would be the official organ of the association.

### Book Reviews

COLLECTED PAPERS BY THE STAFF OF ST. MARY'S HOSPITAL (MAYO CLINIC) 1911. Octavo of 603 pages, illustrated; price, cloth, \$5.50 net. Philadelphia and London: W. B. Saunders Company, 1912. Canadian agents: The J. F. Hartz Company, Limited, Toronto.

The first of these volumes appeared in 1909, and the present volume contains all the papers read and published by the members of the staff of St. Mary's Hospital during the year 1911. The phenomenal growth of the Mayo clinic at Rochester, Minnesota, both as regards the amount of work done there and also as regards the world-wide interest evoked by the character of that work, renders the issue of each succeeding volume of this series a sort of surgical milestone. The contents of the volume are as varied as the nature of the work done at the clinic, and yet the arrangement of the papers is such as will enable the reader, at a glance, to pick out whatever may be of interest to him. The list of contributors shows that most of the staff have written something worthy of publication during the year, and Mrs. Mellish has, as usual, fulfilled the task of editing and arranging these papers with her usual skill, the careful indexing being especially praiseworthy. The illustrations are particularly good, especially the numerous reproductions of skiagrams. The good paper upon which the work is printed and the excellent wood-cuts have here done wonders.

Charles H. Mayo's articles upon the open treatment of fractures are sound and sane. He does not advocate using Lane's plates upon every case of fracture, but he is not afraid to use these buried splints, or other methods of fixation, in those cases in which they are called for to secure a good functional result. Particularly interesting are the few papers devoted to surgical technique, and one wishes there had been more of them. Among the general papers is a thoughtful essay on the "Causation of Cancer," by Wilson, and W. J. Mayo details, in his usual bright and sympathetic manner, his impressions of a visit to some of the more noted clinics. The last article in the volume is entitled, "In Memoriam." It is a simply written account of the life and labours of William Worrall Mayo, father of W. J. and C. H. Mayo, who died at Rochester, in

March, 1911. He thus lived to see the modest clinic, which he founded in connexion with St. Mary's Hospital in 1863, become the surgical centre which it is to-day, and to know that this success was due to the honest work and scientific vision of himself and his two sons. An Englishman by birth, his life, in his early professional years, had been a strenuous one; and what with Indian warfare and the bitter fratricidal strife between the North and the South, one wonders how he accomplished so much scientific work. Yet we know from this article that, though he was freed from professional worries during the last fifteen years of his life, he never lost interest in the work of the hospital, and his physical and mental vigour are shown by the fact that at the age of eighty-five he made a trip around the world alone, and his regretted demise at the age of ninety was due to an accident. Is it any wonder that the sons of such a father should astonish visitors by the amount of work they accomplish every day?

The binding, general appearance, and especially the printing of this volume are, from the reader's point of view, all that could be desired, and reflect great credit upon the well-known publishing house which has issued it.

**MIND AND ITS DISORDERS. A TEXT-BOOK FOR STUDENTS AND PRACTITIONERS.** By W. H. B. STODDART, M.D., F.R.C.P. Second edition; illustrated; price 12s. 6d. net. London: H. K. Lewis, 1912.

Dr. Stoddart's book has been familiar to most students of mental disease since the publication of the first edition about four years ago, but the progress since that time has been so marked that what amounts to practically a rewriting of the subject has been found necessary. Indeed, two chapters have been added upon the subject which the author describes as the study of the "sub-conscious by psycho-analytic methods." The book is especially rich in its consideration of the legal aspects of insanity in England at least. It has arisen out of an extraordinarily wide experience, and every page is enriched by references to incidents which must have happened in the daily life of the writer. It is not a bald narrative and can be read with interest even by a person who is not especially concerned in the subject which it treats. This is quite different from saying that the book is not entirely scientific. The illustrations are numerous and useful, and the printing is in the best style of Mr. Lewis.

**THE THERAPY OF SYPHILIS. ITS DEVELOPMENT AND PRESENT POSITION.** By Dr. PAUL MULZER, of Berlin. With a preface by PROFESSOR P. UHLENHUTH, M.D.; translated by A. NEWBOLD. Price, cloth, \$1.50 net. New York: Rebman Company, 1912.

Messrs. Rebman make a specialty of presenting to the profession translations of the best books which proceed from the German clinics and laboratories. This is a service of great value and it is increased by the wise selection which they make from the great output of German literature. The subjects are usually limited in scope, and the treatment is always by a master. In view of recent discoveries, it is proper that a summary should be given of the present position of the therapy of syphilis. The treatment of this disease has been entirely transformed since the discovery of salvarsan; and it is an interesting fact that Dr. Mulzer by no means underestimates the value of mercury. The historical summary is comprehensive and sound, and the bibliography is extensive, although it is not to be wondered at that less than justice has been done to the observation of English-speaking physicians.

**A TEXT-BOOK OF PRACTICAL THERAPEUTICS. WITH ESPECIAL REFERENCE TO THE APPLICATION OF REMEDIAL MEASURES TO DISEASE AND THEIR EMPLOYMENT UPON A RATIONAL BASIS.** By HOBART AMORY HARE, M.D., Professor of Therapeutics and Materia Medica in the Jefferson Medical College of Philadelphia. Fourteenth edition, thoroughly revised. Octavo, 984 pages, with 131 engravings, and 8 full-page coloured plates. Cloth, \$4.00 net. Philadelphia and New York: Lea & Febiger, 1912.

Fourteen editions in twenty-two years—that is really the only comment which it is necessary to make upon this book. There are few physicians who have not one or other of those editions in their libraries, and we may well believe that Dr. Hare has again succeeded in his "endeavour to include all that is valuable in the method of employing both old and new remedies." The especially new matter which we note is chapters dealing with the use of salvarsan, tuberculin, vaccine, therapy, Bier's method of treatment by artificial hyperæmia, and the employment of cardiac stimulants in cases of lesions of the bundle of His. The book is the product of thirty years' experience and is likely to remain a standard for many years to come.

### Books Received

The following books have been received, and the courtesy of the publishers in sending them is duly acknowledged. Reviews will be made from time to time of books selected from those which have been received.

**A MANUAL OF PERSONAL HYGIENE: PROPER LIVING UPON A PHYSIOLOGIC BASIS.** By EMINENT SPECIALISTS. Edited by WALTER L. PYLE, M.D. Fifth edition, revised and enlarged; illustrated; price, cloth, \$1.50 net. Philadelphia and London: W. B. Saunders Company, 1912. Canadian Agents: The J. F. Hartz Company, Limited, Toronto.

**LIFE AND LETTERS OF DR. WILLIAM BEAUMONT, INCLUDING UNPUBLISHED DATA CONCERNING THE CASE OF ALEXIS ST. MARTIN.** By JESSE S. MYER, A.B., M.D. With an introduction by SIR WILLIAM OSLER, M.D., F.R.S., and fifty-eight illustrations. St. Louis: C. V. Mosby Company, 1912.

**AN INTRODUCTION TO THE STUDY OF INFECTION AND IMMUNITY, INCLUDING SERUM THERAPY, VACCINE THERAPY, CHEMOTHERAPY, AND SERUM DIAGNOSIS.** By CHARLES E. SIMON, M.D. Octavo, 301 pages; illustrated. Price, cloth, \$3.25, net. Philadelphia and New York: Lea & Febiger, 1912.

**HOUSE FLIES AND HOW THEY SPREAD DISEASE.** By C. G. HEWITT, D.Sc. Cambridge: University Press, 1912.

**MOTHER AND BABY. OUTLINES FOR A YOUNG MOTHER ON THE CARE OF HERSELF AND BABY.** By SELINA F. FOX, M.D., B.S. Illustrated. Price, 1s. 6d., net. London: J. & A. Churchill, 1912.

**AIDS TO THE DIAGNOSIS AND TREATMENT OF DISEASES OF CHILDREN.** By JOHN McCaw, M.D., R.U.I., L.R.C.P., Edin. Fourth edition. Price, cloth, 4s., net.; paper, 3s. 6d., net. London: Baillière, Tindall & Cox, 1912.

- A MANUAL OF AUSCULTATION AND PERCUSSION EMBRACING THE PHYSICAL DIAGNOSIS OF DISEASES OF THE LUNGS AND OF THE THORACIC ANEURYSM AND OF OTHER PARTS. By AUSTIN FLINT, M.D., LL.D. Sixth edition, revised and enlarged by HAVEN EMERSON, A.M., M.D. Philadelphia and New York: Lea & Febiger, 1912.
- MATERIA MEDICA AND PHARMACY. By R. R. BENNETT, B.Sc. (Lond.), F.I.C. Second edition. Price 4s. 6d., net. London: H. K. Lewis, 1912.
- MIND AND ITS DISORDERS. A TEXT-BOOK FOR STUDENTS AND PRACTITIONERS. By W. H. B. STODDART, M.D., F.R.C.P. Second edition. Price, 12s. 6d., net. London: H. K. Lewis, 1912.
- MUSCLE SPASM AND DEGENERATION IN INTRATHORACIC INFLAMMATIONS AND LIGHT TOUCH PALPATION. By F. M. POT- TINGER, A.M., M.D., LL.D. Illustrated. Price, \$2.00. St. Louis: C. V. Mosby Company, 1912.
- CLINICAL BACTERIOLOGY AND HÆMATOLOGY FOR PRACTITIONERS. By W. D'ESTE EMERY, M.D., B.Sc., (Lond.) Fourth edition. Price, 7s. 6d., net. London: H. K. Lewis, 1912.
- A TEXT-BOOK ON GYNÆCOLOGY. By WILLIAM S. GARDNER, M.D. Illustrated. New York and London: D. Appleton & Com- pany, 1912.
- A TEXT-BOOK UPON THE PATHOGENIC BACTERIA AND PROTOZOA. FOR STUDENTS OF MEDICINE AND PHYSICIANS. By JOSEPH MCFARLAND, M.D. Seventh edition. Octavo of eight hundred and seventy-eight pages with two hundred and ninety-three illustrations; price, cloth, \$3.50 net. Phila- delphia and London: W. B. Saunders Company, 1912. Canadian Agents: The J. F. Hartz Company, Limited, Toronto.
- A PRACTICAL TREATISE ON FRACTURES AND DISLOCATIONS. By LEWIS A. STIMSON, B.A., M.D., LL.D. (YALEN). Seventh edition; illustrated. Price, cloth, \$5.00 net. New York and Philadelphia: Lea and Febiger, 1912.

## Men and Books

BY SIR WILLIAM OSLER, M.D., F.R.S.

XVI. WILLIAM BEAUMONT. Generations of medical students have listened with keen interest to the tale of William Beaumont and his Canadian *voyageur*, Alexis St. Martin, one of the most instructive chapters in the history of physiology; but the story in full has lain buried in two old chests, the possession of Mrs. Keim, Dr. Beaumont's daughter. Some ten years ago she very kindly gave me access to some of these documents, which I used for an address on "A Pioneer American Physiologist," and now Dr. Jesse Myer, of St. Louis, has utilized them freely in the "Life and Letters of William Beaumont" (St. Louis, C. V. Mosby Co., 1912). The work is a model biography, in the preparation of which the author has gone to the original sources; and we have a picture drawn by a strong hand, with admirable taste and judgement. It is a tribute to the care with which the old New England registers have been kept that the author has been able to trace the genealogy of William Beaumont to an ancestor of the same name who settled in Saybrook, Conn., about 1640. Born of a fine sturdy stock, with the "Wanderlust" still active, in 1806 the future physiologist, then just of age, refused the offer of a farm from his father and started north "with a horse and cutter, a barrel of cider and \$100," seeking his fortune. At Champlain, in New York State, close to the Canadian border, he taught school for three years; at the end of which time he began the study of medicine under Dr. Chandler, of St. Albans, Vermont, with whom he served an apprenticeship for two years. From the note-books of this period Dr. Myer quotes a number of cases which show that the young student was already a keen observer. In June, 1812, he presented himself for examination before the Medical Society of the State of Vermont, and received a license "as a judicious and safe practitioner in the different avocations of the medical profession." War with Great Britain had just been declared, and Beaumont was gladly received into the army at Plattsburg, on December 22nd, as Surgeon's Mate. His diary of the expedition against Toronto—then Little York—and the capture of the fort, is full of interest, and here he

had his first and very active experience in military surgery. He was on duty for nearly two years, and took part in the battle of Plattsburg in August, 1814. Though still retaining his rank, he began practice with another army surgeon in Plattsburg, announcing that they had "commenced business in the line of their profession," in connexion with which they had also opened a general store. His note-books of this period show how carefully he kept the records of important cases.

Though very successful in practice, the longing for the old military life induced him, in 1830, to accept a commission as Post Surgeon, and he was detailed for service at Fort Mackinac (then on the far away north-west frontier), which he reached by way of the Great Lakes, taking a passage at Black Rock by the *Walk on the Water*, the first steamer on the upper lakes. His journals at this time are very full and valuable, giving an excellent description of the country.

At Mackinac, the centre of the trading posts in the North-West, in June, 1822, occurred the accident to the young French-Canadian, Alexis St. Martin, which gave Beaumont the opportunity of his life. The circumstances of the case are very fully given by Myer, and there is reproduced a most interesting facsimile of the first page of Beaumont's hospital record. It was not until 1825 that Beaumont realized the great importance of St. Martin for experimental purposes. Through the wound, by this time completely healed, he could look directly into the cavity of the stomach, and St. Martin had been taught to submit passively to almost any procedure.

The story of the famous experiments is in every work on physiology, but the details given by Dr. Myer enable us better to appreciate the troubles, worries, and difficulties with which Beaumont had to contend. The famous book on "Experiments and Observations on the Gastric Juice" appeared at Plattsburg in 1833. Badly printed, on poor paper, it is one of the most treasured of American medical monographs, copies of which are becoming increasingly scarce.

In 1834 Beaumont was transferred to Jefferson Barracks, St. Louis, which was to be his residence for the remainder of his life. The following year he took part in the establishment of a School of Medicine in St. Louis, and was offered the Chair of Surgery. In 1840 he resigned his commission and began private practice. After a busy and prosperous life, Beaumont died in March, 1853, universally beloved in the community.

Alexis St. Martin returned to Canada, and spent the latter part of his life at St. Thomas de Joliette. In 1880 I saw a newspaper announcement of his death, and through Judge Baby and Dr. Duncan McCallum I tried hard to be allowed to secure the stomach for the Surgeon General's Museum at Washington, but the family resisted all requests. Judge Baby got for me the interesting photograph of St. Martin, in his eighty-first year, reproduced at page 299, showing the fistulous orifice.

Beaumont's observations settled many obscure points in the physiology of digestion, and one misses in Dr. Myer's book a critical discussion of the significance of his work, and its relation to more recent views. His experiments may be said to have settled finally the chemical nature of the digestive process, and among other important observations may be mentioned the confirmation of the discovery by Prout of the presence of hydrochloric acid in the gastric juice; the recognition that the essential elements of the gastric juice and the mucus secretion were separate; the establishment by direct observation of the profound influence of mental disturbances on the secretion of the gastric juice and on digestion; the fuller and more accurate comparative study of digestion in the stomach with digestion outside the body; the rapid disappearance of water from the stomach through the pylorus; the first comprehensive and full study of the motions of the stomach; the study of the digestibility of different articles of diet, which remains to-day one of the most important contributions ever made to practical dietetics; and the relation between the amount of food taken and the quantity of gastric juice secreted.

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A NEW wing is to be added to St. Joseph's Hospital at London. Patients are continually being refused, as there is no room for them in the hospital. This applies not only to St. Joseph's but also to the Victoria Hospital. However, the two wings which are being added to the latter institution are almost completed now, and St. Joseph's Hospital will be enlarged next spring as soon as it is possible to begin to build.

**Res Judicata****THE OTTAWA EPIDEMIC**

**I**NCREASED knowledge brings increased responsibility, and the progress of sanitary science has entirely altered the position of a medical officer of public health. He can no longer plead that he merely shares a common ignorance of the causes of epidemics. He knows the causes. He knows how they should be prevented or removed. His whole duty is not performed when he has offered advice. If that advice is not followed his duty is to resign, as a physician would withdraw attendance upon a patient who deliberately neglected his instructions. The fate of the medical health officer of Ottawa—no matter how it may be deplored by the profession—is likely to arouse all health officers to a fresh apprehension of their duties and of their dangers. At the moment small-pox is prevalent in Montreal and its vicinity. For two years there has been a remarkable recrudescence of the disease in the province at large. An unvaccinated population is growing up and it is as sure as truth that the present outbreak, if unchecked, will blaze up into such an epidemic as fell upon the people in 1885, when four thousand persons lost their lives. In that hour the health authorities will not be held to be justified by the plea that they gave advice which was not heeded, and instructions which were not carried out. Their only safety lies in a timely resignation, if their advice is not followed, and a transference of the responsibility to the people as a whole.

During the summer an epidemic of typhoid broke out in Ottawa. It could not help breaking out, as the people were drinking water from a broken pipe which was laid in a sewer. More than fifteen hundred persons were affected and seventy lost their lives. This is really a case of homicide on a large scale, and the medical health officer is blamed,—blamed, too, by a colleague in a formal report. One may well believe that Dr. Shirreff did his best in the face of official obduracy, and civic neglect; yet that does not relieve him. He was the officer responsible.

Dr. Charles A. Hodgetts, the medical officer of the Conservation Commission, has performed his duty thoroughly and fearlessly, and it must have been an extremely unpleasant one. There has

never been a clearer exposure of civic incompetency, and the logical outcome is that the community itself should be penalized for destroying the lives of those who are compelled to live within it. Dr. Hodgetts puts the facts nakedly when he recommends that a metal tag be attached to each water-tap with an inscription in French and English: "The water drawn from this tap may at times contain a virulent poison."

The first business of a community, civilized or uncivilized, is to provide itself with some arrangements, primitive or complicated, by which it shall avoid the necessity of eating, drinking, or re-breathing, its own excretion. This is the end and aim of all hygiene and sanitation. The easy device which savage people practice is to move away from a locality which has become so defiled that existence is no longer bearable or even possible. But as soon as they erect habitations for themselves they become indisposed to pursue this migratory policy and endure, as well as they can, the evils which they created. Pestilence and plague are the results, until a merciful fire sweeps away the whole abomination, and allows of a repetition of the offence. But as these habitations become more durable, and brick and stone replace straw and wood, the remedy of fire is less generally applicable, and the pestilence goes unchecked. To abandon the sites of Ottawa, Montreal, Kingston, and Toronto, for example, would be inconvenient, and the edifices are too well built to hope much from the salutary fire.

A better way had to be found. Accordingly sewers were constructed to carry off the refuse, and pipes were laid to carry water. But the indiscretion was committed of drawing the water from the receptacle into which the sewage had been discharged. By a rare feat of ingenuity, however, the intake for the water was placed at some little distance from the discharge for the sewage. Under the best conditions this merely meant that a community was satisfied if it did not consume its own sewage. It was still content to poison a community lower down the river, and to be poisoned by a community which had its habitation higher up. Cities in Canada may be divided into two classes, according as their inhabitants are poisoned by themselves or by their neighbours. Toronto and Kingston fall into the first class; Montreal in the second, and Ottawa in both; but all four poison their neighbours indiscriminately.

The difficulty has arisen out of our failure to understand that a river is designed to drain a country. It always lies at the lowest level of the land through which it passes. Its very excellence as a

drain is precisely the quality which makes it the worst possible source of supply for water which is to be drunk. In Europe the people have made the discovery that this drain may be used to sail boats on; it never occurs to them to drink of its water. The Romans made the same discovery. They employed the rivers for legitimate purposes, and sought their water supply at the proper source. In all the regions which they occupied there yet remain the ruins of those splendid aqueducts by which they brought water from the clean hills. We are content to bring our drinking supply in an open ditch from a polluted river.

The degree of civilization to which a community has attained may be judged by the number of deaths which occur from typhoid fever. It is an index of the regard in which cleanliness of living, and even life itself, is held. Before setting forth in all its enormity the death rate from typhoid which prevails in the cities of Canada, it will be advisable, for the sake of erecting a standard for comparison, to cite the rate for European countries. In Scotland the deaths from typhoid during the years 1901-05 were 6.2 per hundred thousand of the population; in England and Wales, 11.2; in Germany, 7.6; in Belgium, 16.8; in Austria, 19.9.

According to the latest returns, the death rate in Canada is 35.5, which is higher than in Hungary, where it is 28.3; in Italy, where it is 35.2; and only lower than in the United States, where it is 46 per hundred thousand of the population.

Let us now consider the state of affairs in the various cities of Canada in the light of statistics supplied by Dr. Charles H. Hodgetts in another report. When it is considered what Scotland has achieved, and that a death rate from typhoid of over twenty per hundred thousand of the population is evidence of gross carelessness, the full significance of the figures will be appreciated. In Edmonton, from 1901-1909, the death rate from typhoid fever per one hundred thousand of population, was: 75.4, 20.0, 32.3, 37.5, 40.0, 254.3, 180.0, 110.0, 76.0. In Winnipeg the rate was: 118.3, 95.0, 82.8, 248.3, 175.0, 108.8, 49.2, 40.5, 38.4. The figures are not to be obtained during all of these years for Fort William, but such as are given disclose the following state: 88.6, 200.2, 132.6, 946.9, 98.5, 94.0. In the province of Quebec, the highest rates, in the cities quoted, are those given for Sherbrooke: 476.6, 227.0, 60.8, 60.8, 30.7, 52.3, 21.6, 108.0, 131.4, 78.4. Of the two largest cities fronting on the chain of the Great Lakes and the St. Lawrence, Toronto has a comparatively low rate, though during the years 1906-1909, the figures have risen to 24.8, 19.4, 19.8, 25.7. During

1900-1909, the rates for Montreal were: 42·6, 44·4, 30·9, 31·4, 31·8, 18·1, 37·0, 33·2, 33·1, 53·8.

These figures have been selected as showing the highest rates. Other cities, such as Vancouver, Victoria, Hamilton, Quebec, Halifax, and Charlottetown, have figures, as a rule, well under the twenty per cent. danger mark. But it is worth remarking that in Charlottetown, where the latest rate is given as 8·3 the water supply is drawn from springs; in Halifax, where the rate was 4 per hundred thousand, the water is drawn from a series of well-guarded lakes; and in Quebec, where the rate was 5·3, the water is drawn from the Laurentian Hills.

If, now, the chief cities of the United States, which border on the Great Lakes, be considered, it will be found that the death rates from typhoid are higher and vary less than those of the cities quoted for Canada. Niagara Falls from 1900-1908, has the following high rates: 107·9, 143·9, 130·4, 126·9, 139·8, 181·6, 147·3, 126·8, 98·0, and Sault Ste. Marie has: 132·9, 92·9, 172·9, 115·9, 52·4, 68·6, 58·9, 16·5, 72·9. Of the twelve cities from which returns are available, only two, and those, curiously enough, Chicago and Milwaukee, have rates which would suggest care and supervision of a water supply.

Strange as it may appear, the discovery of methods for the purification of sewage have harmed rather than helped, since they have confirmed people in their habit of discharging sewage into the rivers from which they drink. The real object to be attained is to prevent rivers from becoming offensive, since no method has been discovered for reducing sewage to such a point of purification that it may be drunk. The plants, which are being erected at enormous cost to filter water, and the sewage farms which are being built, are merely postponing the time when we shall have pure water to drink. Instead of working towards a supply which has always been pure we are wasting our time in purifying water which has already been hopelessly polluted. The proper method is to obtain the purest supply and then purify it still further by filtration. Liverpool has shown us the way. Its water is obtained from a stream rising in the mountains of Wales, the watershed of which is owned or controlled by the city. This circumstance is not, however, depended upon to ensure the entire safety of the water, for it is filtered through slow sand filters before being delivered to the consumers.

The necessity for the purification of sewage may be considered from two points of view; first, with regard to the organic matter

which it contains, and, second, with regard to its germ contents. The inevitable fate of the organic matter is to pass through certain processes of decomposition and oxidation whereby it is ultimately reduced to harmless mineral forms. Under natural conditions this may cause nuisances and conditions offensive to the senses. The main object of sewage disposal, as at present understood and practised, is to prevent this, and to cause the oxidation changes to take place under controllable conditions, quickly, inoffensively, and to such a degree as will at least produce a stable effluent, incapable of undergoing further changes of an objectionable character. All modern methods of treatment are capable of accomplishing this, but without greatly diminishing the number of bacteria present in the raw sewage; therefore, for the purpose of destroying the germs which cause typhoid, nothing is effected. A false security is created by guarding only against visible pollution, and the people continue to be poisoned.

The Canadian Society of Civil Engineers, by means of a committee, completed an important survey of the sanitary condition of Canada, and the chairman, Mr. R. S. Lea, wrote a most valuable report, which was promptly buried in the report of the annual meeting of 1911, from which the present is the second attempt to rescue it. For the purpose of obtaining definite information the list of questions was sent to all places in Canada with populations of one thousand or over. This list was sent to three hundred and twenty-seven places, and replies were received from one hundred and sixty-six. Only eighteen places reported any kind of purification, and in twelve of these it is limited in its nature. Of the one hundred and sixty-six places reporting, one hundred and forty-five have water-works. Of these only thirty-six have supplies from underground sources; forty-four obtain their supply from small lakes and streams in practically uninhabited watersheds; twenty-five from the Great Lakes and the St. Lawrence and Ottawa rivers; and forty from other lakes and streams which are liable to contamination by sewage. From the information furnished by these replies, the committee reports "that not much has yet been done in Canada in the way of purification of either water or sewage."

After a complete analysis of all the replies received and a general consideration of the whole question, the committee summarized its conclusions as follows:

1. None of the methods of sewage disposal, which are feasible and economically applicable on a large scale, can be relied upon to effect complete purification.

2. The distinction between the general surface drainage of a populated district and its urban sewage is one of degree only, and each in itself may render the water into which it discharges, unwholesome and dangerous for drinking purposes.

3. Since much of the surface drainage cannot be even collected for treatment, and since sewage disposal processes in the present state of the art cannot be depended upon to effect complete bacterial purification, it follows that the raw waters of rivers and lakes in populated districts can never be considered entirely safe and fit for domestic supplies.

4. Experience has shown that water of even a considerable degree of pollution can be rendered pure and wholesome by filtration, and, for practical purposes, this is the only reliable means of ensuring the safety of surface supplies from unprotected watersheds.

5. Towns and cities which take their supplies from suspicious sources should not depend for their safety upon the efforts of others, but should themselves adopt such precautions as are available.

6. In Canada, up to the present time, practically nothing has been done in the way of purifying the sewage of municipalities, except in the case of less than half a dozen places in the province of Ontario.

7. The Public Health Acts of the different provinces provide in a general way against the discharge into bodies of water of matter which would cause nuisances, or which would endanger the public health. Such laws lack definiteness, and are, therefore, generally ineffective.

What has been brought about in the way of reform in Great Britain has not been the result of a day. It was not until 1858 that pollution was prohibited in England. In 1861 an Act was passed requiring sewage to be purified and freed from putrescible matters before being discharged into streams. From then until to-day the question has been dealt with by many Acts, and considered by many commissions, and although all difficulties have not yet been overcome, one most important precaution has been taken, namely, the purifying of the whole of the sewage before discharging it into any water course.

In Canada the matter is complicated by the fact that many of the sources of water supply are not only interprovincial, but also international. The Great Lakes, for example, receive a portion of their waters from Minnesota, Michigan, Ohio, New York, Vermont, New Hampshire, and Maine, as well as from the con-

tiguous Canadian provinces. So that to take steps to ensure cleanliness in the water supply of the country will demand that the Federal governments of the two countries deal with the matter. The restrictions imposed at present against polluting water ways are largely municipal, and, as such, each community is concerned chiefly with attempting to keep pure its own particular water supply, without considering whether or not the disposal of its sewage will contaminate the supply of others. Fortunately there are now means by which this joint control can be undertaken by the governments of Canada and of the United States, under a treaty which was signed on January 11th, 1909, and ratified on May 5th, 1910. The main object of this treaty was to prevent disputes regarding boundary waters, but incidentally provision was made to prevent their pollution by communities dwelling upon either banks. Under this treaty it is now provided that all questions and matters of difference arising between the two countries, involving the rights, obligations or interests of either in relation to the other, shall be referred to a commission for examination and report.

The death rate from typhoid in Canada is thirty-five per one hundred thousand of the population. Accordingly, about three thousand persons die every year from the disease. Now, as only about ten per cent. of all patients affected die, it follows that thirty thousand persons are attacked in Canada every year. In addition to the suffering and grief caused by the disease, the drain on the efficiency of the community is enormous by the withdrawal of so large a number of the people from useful employment.

By combining the life value of individuals at different ages with the age distribution of persons dying of typhoid fever, the resulting average value of persons dying from typhoid fever is found to be \$4,634. If to this be added cost of nursing, attendance, and loss of wages, the cost will easily reach \$6,000. According to the census of the United States for the last year for which complete returns are available, 35,379 deaths occurred from typhoid fever. If it be assumed that each of these represents a loss to the community of \$6,000, the total amount is found to be \$212,000,000. Of these deaths probably three-quarters could have been prevented; that is, the needless loss of vital capital was about \$150,000,000; and the same loss is repeated every year.

To demonstrate what can be done to reduce the death rate, the experience of two adjacent cities in the United States may be appealed to. For four years in Albany before an efficient water supply was secured the rate averaged one hundred and four per

hundred thousand. In the next four years it decreased to twenty-six. In Troy, where no alteration was made in the water supply, the rate remained identical during the two periods.

When we reflect upon what has been done in Europe, the shame for our neglect will be the greater. Here we are practically free from the poverty which oppresses Europe. Our population is scattered over an enormous area, whilst in Europe a population of one hundred and seventy-eight billion is crowded into an area little greater than that of the Maritime Provinces, Quebec, Ontario, and Manitoba, which contain fewer than seven million people.

A.M.

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#### NEWFOUNDLAND

DIPHTHERIA is prevalent in St. John's. Most of the cases are among children of from five to twelve years of age. Several deaths from the same disease have occurred at Torbay.

A HOSPITAL is to be opened this winter at Mud Lake, Hamilton Inlet, by Dr. A. W. Wakefield, of the Grenfell Mission. The hospital at Battle Harbor is to be closed during the winter.

SOME extensive improvements have been made to the General Hospital at St. John's, one of the most important being the addition of a Nurses' Home, which is to be called the "King Edward the Seventh Home for Nurses." This is now completed, and it is the intention that the rooms which have been occupied by the nurses shall be converted into wards.

## Retrospect of Surgery

GASTROCOLOPTOSIS. BY THORKILD ROVSING, COPENHAGEN, *Journal of the American Medical Association*, August 3rd, 1912.

**T**HIS paper is a very able exposition of Rovsing's theory of the causation and treatment of gastrocoloptosis. He discards the "diathèse hépatique" theory of Glénard, as well as Stiller's theory of congenital universal asthenia, and says that an explanation for this condition, which is met with almost exclusively in women, is to be found in the misuse of corsets and laces and in the changes in intra-abdominal pressure following pregnancy and parturition.

Rovsing divides these cases into two classes—virginal and maternal gastrocoloptosis. In the first group, the onset of symptoms occurs at or about puberty when corsets are first worn. The previously healthy individual begins to suffer from persistent constipation, followed by lassitude, headache, and distaste for food. Still later, severe pains develop—always to the left of the median line and following the ingestion of food, the quantity and not the quality of the food being the exciting cause. In many instances the pain is accompanied by vomiting, and the subsequent state of nutrition depends largely upon the quantity of food ejected. When vomiting is severe, emaciation may reach an extreme degree, and the patient presents the aspect described by the writer as gastrop-tosis-cachexia. The chemical function of the stomach may be normal or show variations, either in the way of achylia or hyper-acidity. In a majority of the cases the motor function is absolutely normal. In many of these patients nervous symptoms gradually develop: such as a feeling of oppression across the loins, in the pelvis, and in the abdomen, palpitation of the heart, physical depression, et cetera. Finally, the menstrual function is suppressed or becomes deranged. The pain in virginal ptosis is much more severe than in the maternal form. This, in the author's opinion, is due to the transverse folding of the stomach and colon with the development of angles and bends which retard the natural passage of the food. These deformities in the viscera are absent in the maternal form, owing to the greater space afforded by the loss of the elastic support of the abdominal muscles.

In a certain number of cases, the transverse folding of the stomach leads to hour-glass deformity. In fact, Rovsing considers that to this condition rather than to congenital malformation or cicatricial contraction following ulceration, is to be attributed the development of hour-glass stomach. All stages of hour-glass formation have been observed by the writer. In all of them the first symptoms of the disease occurred during the years of puberty. The hour-glass formation he considers to be due simply to the consolidation of adhesions which form between the inverted surfaces of the stomach, as above described.

The differential diagnosis between virginal ptosis and gastric ulcer, colitis, and hysteria, is discussed.

In the second, or maternal form, of gastrocoloptosis there occurs a sagging of the coils of the small intestine followed by coloptosis and eventually by ptosis of the stomach and liver, the extent depending upon the resistance to stretching offered by their suspensory ligaments. In severe forms of the affection, the transverse colon, suspended at either flexure, reaches to the bottom of the pelvis, where it is anchored by the weight of accumulated faeces. In the maternal form, constipation is the dominant feature; the attacks of cardialgia and vomiting are much less striking and may be entirely absent. In time the patients become emaciated and sallow and have an ever increasing sense of prolapse. The coprostasis may attain such a degree that attacks resembling obstruction occur. The stretching of the suspensory apparatus of the stomach may be so great that *volvulus ventriculi* occurs.

It is characteristic of both forms of the disease that all the symptoms complained of, including the constipation, improve or vanish entirely upon confinement to bed, while they at once recur or become worse on the resumption of the upright position.

**TREATMENT.** In certain cases of the maternal form of gastrocoloptosis, Rovsing recommends the use of a large, well-padded pelotte, held in position by a steel spring belt. To be effective the pelotte must be adjusted with the patient in the recumbent position, and must support with a strong and unchanging pressure a wide area of the hypogastrium. Such a support is, however, usually ineffective in virginal gastropptosis and in those severer cases of maternal gastropptosis in which the transverse colon has subsided into the small pelvis. For these cases, Rovsing recommends the operation of direct gastropexy, first practised and described by him in 1897. The technique is, briefly, as follows. Parallel with the lesser curvature three strong silk threads are passed in and out

through the serous coating of the anterior surface of the stomach, leaving the pars pylorica free. The upper thread is placed close under the lesser curvature, and the two others, with an interval of about 2 cm., are placed in such a way that the greater curvature and a rather broad space above it are left free. Next, the parietal serosa and the serosa between the threads is scarified with a fine needle as well as that part of the under side of the liver to which one wishes the stomach to adhere. The ends of the silk thread are led out through the entire thickness of the abdominal wall, those on the left as far from the centre line as the costal arch permits, those on the right about 3 cm. from the middle line. The parietal peritoneum is now closed with catgut, and the fascia and skin with whatever one is accustomed to employ. After the wound has been protected with collodion and cotton wool, the silk sutures are tied over a glass plate covered with sterile gauze, the plate being a little larger than the stomach surface to be fixed. By this method the anterior surface of the stomach is made to lie flat against the anterior abdominal wall without shrinkage or folding. The sutures are withdrawn at the end of four weeks.

Of two hundred and fifty-six cases operated upon in this way by Scandinavian surgeons, 75 per cent. were cured to the extent of being relieved of their pains, or regaining their strength and a healthy appearance, and of being changed from incapable, depressed, miserable wrecks into able-bodied, healthy, and happy people. The mortality from the gastropexy proper is only 1·17 per cent. In 11 per cent. of the cases there was considerable improvement. In 12·8 per cent. the improvement was insignificant or nil. Rovsing urges that where ptosis of the liver co-exists, hepatopepy should be performed simultaneously with gastropexy. He found this operation necessary in sixty-eight out of a total of one hundred and sixty-three cases operated upon by him for gastropptosis.

### Obituary

DR. ALICE MCGILLIVRAY, of Hamilton, died suddenly October 30th. Mrs. McGillivray was the first woman student to take the medical course at Queen's University, and was a medallist in both arts and medicine. When the Kingston Medical College for Women was opened, Mrs. McGillivray became the vice-dean, a title which she held for five years. She first took up her professional work at Chicago, and afterwards went to Hamilton, where she has resided for the past fifteen years.

DR. JOHN HARRISON O'DONNELL, one of the best known physicians of Winnipeg, died October 26th, in the sixty-ninth year of his age. His career was one of unusual interest. He was born in 1844 at Simcoe, Ontario, and there received his early education. Later Dr. O'Donnell went to Victoria University and graduated as M.D. in 1861. In 1869 he went to Winnipeg, and in the following year was appointed to the provincial senate, of which he remained a member until its abolition in 1875; during part of that time he was speaker. In 1872 he was appointed a member of the Board of Education. Dr. O'Donnell took an active interest in the suppression of the Riel rebellion; for ten weeks he was imprisoned by Riel, and afterwards, as justice of the peace, signed the warrant for the arrest of Riel and others. In addition to his professional duties and the part he played in the public affairs of his time, Dr. O'Donnell was the author of a work entitled "Manitoba as I saw it, from 1869 to date" (1910). Although during recent years Dr. O'Donnell did not take so active a part in public affairs, he still continued his practice and during the forty-three years he spent in Winnipeg he held many important positions, being first president of the Manitoba Board of Health, a member of the first council of the Manitoba University, and also of the University Board of Medical Examiners. His loss will be felt keenly by those with whom he worked and among whom he had made many close friends.

DR. WILLIAM HAMLIN died at Toronto, October 26th, in the fifty-eighth year of his age. Dr. Hamlen was born at Goderich,

Ontario, and was a graduate of the Detroit School of Medicine. He also took post-graduate work at McGill University and was closely identified with the Michigan College of Medicine, of which he was vice-president.

DR. EDWIN FLEMING JEFFRIES, of the Hamilton Hospital for the Insane, died from typhoid fever on October 16th. Dr. Jeffries was born in London, Ontario, and was twenty-six years of age.

DR. R. H. WINTER, of Lambeth, Ont., died at Queen Charlotte, B.C., September 16th. Dr. Winter was surgeon in charge of the government hospital and his death was the result of a fall.

DR. H. G. STOREY, of Blenheim, Ontario, died November 5th, in the forty-seventh year of his age. After graduating from Toronto University, Dr. Storey began his professional work at Blenheim, and has practised there for the last eighteen years. He was a prominent member of the Masonic Brotherhood. He was also a keen politician and was several times president of the County Conservative Association.

DR. J. T. DUNCAN, of Toronto, died in California on Tuesday, November 5th. Dr. Duncan graduated in 1882 from the University of Toronto and afterwards practised there for some years. Later he went to England, where he made a special study of the eye and ear, and on his return to Toronto he devoted himself to that particular branch of the profession. Dr. Duncan was well known in Toronto and was oculist at the Western Hospital, lecturer in anatomy at what is now the Ontario Veterinary College, and one of the first government coroners in Toronto. He leaves a widow and two sons.

DR. WILLIAM J. ROE died at Georgetown, Ontario, in the seventy-fifth year of his age.

## News

### MARITIME PROVINCES

A MEETING of the New Brunswick Medical Board took place at St. John, November 5th. Among those present were Dr. B. M. Mullin, Dr. Jones, Dr. Sprague, and Dr. A. J. Murray. The meeting was principally concerned with the reorganization of the board. The free distribution of antitoxin and serums was also considered, but the question was left to be discussed at a later meeting.

THIRTEEN cases of diphtheria, twelve of typhoid, and nine of scarlet fever were reported in St. John during October, 1911; this year there have been no cases of diphtheria, only five of scarlet fever, and nine of typhoid.

ONE thousand two hundred and seventeen school children have been examined by the medical inspector at Amherst, N.S., with the result that eight hundred and eighty-nine cases have been referred to physicians for treatment. The figures given above cover the period from February, 1911, when the examinations were commenced, until June, 1912. The result has been most satisfactory and of benefit both to the child individually and to the school as a whole.

EIGHTY-NINE deaths from tuberculosis occurred in St. John last year. This number is somewhat less than during previous years, but there is still room for improvement. A great deal has been accomplished by the dispensary towards the prevention of the disease, but a sanitarium for advanced cases is badly needed.

As yet there is no medical inspection of the children in the public schools of St. John. The results obtained in other cities have been satisfactory and many citizens are of the opinion that some such examination should be instituted in the schools there.

### ONTARIO

Two hundred thousand dollars have been granted by the city of Toronto to the King Edward Memorial fund for hospitals.

OVER five thousand dollars have been collected by Miss Lewis, of Hamilton, and have been given by her to the city for the purpose of building a children's hospital.

DR. T. G. RODDICK, of Montreal; Dr. George Kennedy, of MacLeod, Alberta, and Dr. Walter Bapty, of Victoria, have been appointed members of the Dominion Medical Council.

AT a recent meeting of the Ottawa city council the following resolution was passed: "That in view of the two recent serious typhoid epidemics which Ottawa has experienced, this council wait upon the Right Hon. the Premier to urge upon the Dominion government the vital necessity of creating a department of public health, so that effective means may be taken to protect all drinkable streams from pollution."

AT a meeting of the Ottawa board of health on November 1st, a resolution was passed approving of the suggestion that a municipal abattoir should be established.

AT the beginning of November there were seven cases of small-pox in the Swiss Cottage Hospital at Toronto.

IN Toronto, during the seven months from April to October, the death rate for acute contagious diseases was 85 per 100,000 population. This is less than last year, when the rate was 102 per 100,000.

ONE hundred and fifteen cases of infectious disease have been reported in Brantford during the past twelve months. The amount of typhoid this year has been very much less than last year, only twenty-four cases having been reported as compared with fifty-five last year. Tuberculosis, on the other hand, has somewhat increased, twenty-two deaths having occurred this year and fourteen last year. During the year, two hundred and sixteen deaths occurred, and of these eighty-four were infants of less than one year of age.

THE amount of typhoid in Fort William has been much less this year than last. From June 1st to September 1st, only thirty-three cases were reported, whereas during the same period last year there were fifty-six cases. This improvement is largely due to the more satisfactory water supply.

At a meeting of the board of directors of the Guelph General Hospital, held November 4th, it was decided to ask the city council to submit a by-law at the January elections asking for twenty-eight thousand dollars. If this sum is granted, it is proposed to make some repairs and alterations to the east wing of the hospital. A by-law for the same purpose, asking for twenty-five thousand dollars, was submitted last summer, but it was defeated. It is hoped that conditions will be more favourable in January.

At a meeting of the Chatham board of health on November 4th, it was decided that although the landlord is responsible for the disinfecting of a house, the cost of doing so will be borne by the board of health. It was considered that, as disinfection is a matter of public safety, it should be paid for by the public. On this occasion, a motion was also carried asking the council to submit a by-law which would require that all bread should be wrapped before leaving the bakery.

A MEDICAL research fund has been subscribed by the business and professional men of Toronto. The fund, which will amount to from twenty to fifty thousand dollars a year, is the result largely of Dr. McPhedran's efforts. The research work will be directed by a committee consisting of Dr. Falconer, the president of the university; Dr. McPhedran, Dr. Clarke, Dr. Leathes, Dr. Brodie, and Dr. Mackenzie. A portion of the fund will be devoted to research work in tuberculosis.

ONE hundred and one cases of tuberculosis and sixty-seven deaths occurred in Ontario during October; one hundred and seventy-three cases of typhoid fever, resulting in thirty-six deaths; two hundred cases of diphtheria, resulting in twenty-two deaths; one hundred and forty-four cases of scarlet fever with one death; thirteen cases of infantile paralysis with one death; five cases of small-pox; one hundred and twenty-six cases of measles with one death; thirty-four cases of whooping cough, resulting in four deaths; and two cases of spinal meningitis, both of which were fatal. In all, seven hundred and ninety-eight cases of infectious disease, one hundred and thirty-four of which terminated fatally. This is rather less than last year, when there were eight hundred and forty-two cases, and one hundred and twenty-eight deaths during October.

THE eighteenth annual meeting of the Ottawa Maternity

Hospital was held November 5th. The superintendent stated that four hundred and three patients had been admitted during the past year and two deaths had occurred. The treasurer's statement showed a balance on hand of \$267.31. More accommodation is needed in the hospital and during the last few months it has been impossible to admit all those who wished to enter the hospital as there was no room for them. What is needed is another wing, and it is hoped that it will soon be possible to add this to the present building; the cost would be about \$75,000, and an effort to collect this amount is to be made shortly. An elevator has recently been placed in the hospital at a cost of \$6,000.

A HOSPITAL to cost fifty thousand dollars is to be erected at Cochrane. The site has been given by the Timiskaming and Northern Ontario Commission, and it is probable that twenty thousand dollars will be given by the Toronto Board of Trade; this sum is the balance of the money contributed for the relief of those who suffered from fires in Northern Ontario last year.

A NEW wing, which is to be called the Empire wing, is to be added to the Kingston General Hospital. The corner-stone of this wing was laid by Mr. B. W. Robertson, a member of the board of governors, on Thursday, October 17th.

SEVERAL cases of typhoid have occurred in the Hamilton Hospital for the Insane.

A BY-LAW has been introduced, and will be submitted to the ratepayers next January, to grant two hundred and fifty thousand dollars to the Hospital for Sick Children at Toronto.

THE Hospital for Consumptive Children near Weston is almost completed. It will provide room for one hundred children. There are already twenty children waiting to enter the hospital; temporary accommodation has been provided for them in the meantime. The total cost of the hospital is about fifty thousand dollars.

DURING the year ending September 30th, 1912, eleven hundred patients received treatment in the Guelph General Hospital.

AN interesting account of the work that is being done by the Parkdale Hospital for Incurables, Toronto, was given at the annual

meeting on Friday, October 25th. At present there are one hundred and eighty-three patients in the hospital; eighty-five of these were admitted during the past year, seven were discharged, twenty-seven died, and three were sent to the asylum. The total number of deaths during the year was fifty-six, twenty of these being due to cancer. The city has been contributing a per capita grant of thirty-five cents a day; but this sum has now been augmented to fifty cents. The daily cost for each patient is about seventy-four cents. The financial report for 1911 shows a deficit of \$10,257; the increased civic grant, however, will do much to reduce this amount.

As a means of the prevention of slums, Dr. Roberts, the medical officer of health for Hamilton, has decided to issue weekly bulletins on general health work. The information contained in the bulletin will be both interesting and instructive to the general public.

THE sixteenth annual report of the trustees of the Sarnia General Hospital was submitted last month. During the past year, five hundred and twenty-three patients have been treated in the hospital, and among these were eighty-eight cases of typhoid fever and one hundred and thirty-one surgical cases. There were sixty births and fifty-seven deaths.

THE medical superintendent of the Hamilton Hospital stated in his annual report that almost four thousand two hundred indoor patients had been treated during the past year, three hundred and thirty-three deaths had occurred, and the total expense of conducting the hospital had been \$104,318. The per capita cost per day was \$1.26. The advisability of increasing the rates for patients in semi-private wards was discussed. It was suggested that these rates should be advanced from \$4.90 to \$7.00 a week. The rate of \$4.90 was charged because the government gave a grant of thirty cents a day in cases where the charge made did not exceed \$4.90; but the Act has since been amended, and the grant is now given if the charge made is not more than \$7.00. During the past year the receipts from patients have amounted to \$48,687, and the civic grant has amounted to \$42,220.

At a meeting of the Associated Charities of Toronto, which took place November 11th, it was suggested that a building should be rented and used as a temporary hospital, where persons

mentally deranged and convicted of crime, could be detained. It is proposed to build a hospital for the purpose, the cost of which is estimated at about one hundred thousand dollars.

A DECISION has been come to in regard to the tuberculosis sanitarium which is to be established in Essex county. The sanitarium is to be built at Union. The plans have been prepared and forwarded to the provincial board of health for approval and the building will be commenced at the earliest moment possible.

THE seven district officers of health recently elected for the the province of Ontario have completed the special course in public health, given under the direction of Dr. McCullough, and have taken up their duties in the respective districts allotted to them.

At the meeting of the Dominion Medical Council in Ottawa, November 7th and 8th, the following officers were elected: president, Dr. Roddick, Montreal; vice-president, Dr. Thornton, Deloraine, Manitoba; registrar, Dr. R. W. Powell, Ottawa; executive committee, Dr. McKechnie, Victoria; Dr. Hardy, Toronto; Dr. Stewart, Halifax; Dr. Brett, Banff; Dr. Spankie, Wolf Island; and Dr. Normand, Montreal.

### QUEBEC

THE sixth annual report of the Hospital for Incurables at Notre Dame de Grace was issued recently. The receipts for the year ending June 30th, 1912, amounted to \$74,388.13, of which \$1,000 was granted by the government and the greater part of the remainder subscribed, and the expenditures amounted to \$71,059. Three hundred and fifty-seven patients were admitted during the year, two hundred and four died, and one hundred and sixty were discharged.

UNLIKE most cities, as yet Quebec has made no provision whereby its ambulances will be accompanied by a physician. The ambulances are not attached to the hospitals and are accompanied by a policeman and a fireman only. Needless to say, this arrangement is by no means an ideal one. The matter is now under the consideration of the civic health committee.

THERE is a good deal of small-pox throughout Quebec. Two deaths have occurred from the disease, one at Beauharnois and one at St. Laurent, where thirty cases are reported. At Valleyfield there are at least twenty-five cases. Precautionary measures are being enforced by the provincial board of health, but there has been some negligence on the part of local practitioners in reporting cases, and in more than one instance people suffering from a mild form of the disease have been allowed to continue to perform their daily duties.

OVER thirty cases of small-pox are being treated in the Montreal isolation hospital; four of these patients are from one family.

SEVEN hundred thousand dollars have been guaranteed to the Notre Dame Hospital at Montreal by a committee formed for this purpose. Each member of the committee will be responsible for \$35,000. This sum will not only relieve the hospital of its financial difficulties, but will also make it possible for the trustees to devote the government grant to the purchase of necessary equipment, etc. The interest and sinking fund on the \$700,000 will be \$54,000 a year, which will be payable for twenty years, when the hospital will be free from debt. An appeal will be made to the public to subscribe the \$54,000 required each year, and this appeal, one feels sure, will meet with a generous response.

A HOSPITAL is to be erected by members of the Salvation Army in Montreal to the memory of the late General Booth. The site has been purchased at a cost of \$35,000 and the name of the hospital is to be the "General Booth Memorial Hospital."

THE third annual report of the Royal Edward Institute shows that the receipts during the year have amounted to \$11,892, while the amount expended has been \$12,285, leaving a deficit of \$393. On reading the report, Lieutenant-Colonel Burland spoke of the great need of an institution for the treatment of advanced cases of tuberculosis in Montreal. The site for such a hospital has been secured and certain citizens are prepared to erect a building at a cost of one hundred thousand dollars, if the city and the province will undertake to provide twenty thousand dollars a year for the maintenance of the hospital.

It is proposed to establish another hospital in Montreal for

children under two years of age. In spite of all that has been accomplished by the Foundling Hospital, there is still great need for further work of this nature, as is clearly indicated by the fact that during the past year nearly four hundred infants were refused admittance by the Foundling Hospital in consequence of lack of space. The death rate amongst children under one year of age in Montreal is two hundred and fifty per thousand, the third highest infant mortality rate of any city in the civilized world.

THE Ste. Justine Hospital at Montreal is to be extended to make provision for six hundred more children than the present building can accommodate. Four hundred and six children were admitted during 1911 and fifty-nine deaths occurred; a large proportion of these succumbed within forty-eight hours after admission to the hospital.

#### MANITOBA

THE establishment of a hospital at Rosetown is now under consideration.

AN earnest appeal is made by the trustees of the Winnipeg General Hospital for more generous support by the citizens. As the city expands the work of the hospital grows, and as a natural consequence the expenses increase. The total daily income is now \$500, and the daily expenses amount to \$600. This means that there is a daily deficit of \$100. As is the case in other hospitals, there are a great many patients who are unable to pay anything towards their maintenance and treatment; the average cost per day of providing for each of these patients is \$1.92, so that a loss is sustained by the hospital notwithstanding the municipal grant of one dollar and the government grant of twenty-five cents for every such patient.

#### SASKATCHEWAN

A SITE for a hospital at Rosthern has been granted by the Dominion government. The hospital will be called the "Alexandra Hospital."

THE hospital at Wakaw is to be enlarged and it is probable that a new building will be erected.

MISS C. L. SHAW, of Hamilton, Ont., has been appointed matron of the Victoria Hospital at Prince Albert, in the place of Miss Lockerbie, who resigned recently. A new staff of nurses and orderlies has also been secured. In the monthly report, the superintendent stated that on September 1st, there were nineteen patients in the hospital, twenty-seven were admitted during the month, and twenty-one were discharged; four deaths occurred and fifteen operations were performed. At a meeting of the hospital board, which took place October 8th, the unsanitary condition of the present isolation hospital at Prince Albert was discussed. It was decided to build a new hospital and to take up the matter with the city council.

A HOSPITAL is to be built at Canora. The necessary money has been given by Dr. A. S. Grant, the superintendent of home missions for the Presbyterian Church, Peterborough, Ont. A site six hundred feet square has been secured and it is proposed to place the hospital in the centre, and later on to build an isolation hospital, a nurses' home, a children's home, and a doctor's residence, all of which will be placed near the hospital.

It is probable that a bacteriological laboratory will be established in connexion with the Moose Jaw Hospital.

Although the number of cases of typhoid compares favourably with last year's returns for the same month, there has been a good deal of typhoid at Moose Jaw. On October 24th, there were about seventy-five cases in hospital.

THE Grey Nuns Hospital at Regina was formally opened by H. R. H. the Duke of Connaught on Sunday, October 13th.

HOSPITALS are being established by the Railway Mission in isolated places on the prairie. Accidents and sickness are very common in such places and the need of hospitals is great. The first to be established is one that is now being built at Davidson; the foundation stone was laid on October 14th by H. R. H. the Duke of Connaught.

#### ALBERTA

It is proposed to build a hospital on Bow Island. A hospital board has been elected and it is expected that the greater part of the necessary funds will be provided by private subscriptions.

It is probable that the Galt Hospital at Lethbridge will be taken over by the city. A communication from the trustees in connexion with the matter was received at a recent meeting of the Lethbridge city council.

THE report of the medical officer of health for Lethbridge shows that there has been comparatively little typhoid during the months of July, August, and September. In July there were five cases, in August four, and in September twelve. There were thirty-one cases of measles during July, but, apart from this, there has been little disease of an infectious nature.

ACCORDING to the *Edmonton Journal*, a great many cases of typhoid fever have occurred in the immediate neighbourhood of the hospitals. Dr. Whitelaw, the medical officer of health, criticizes very severely the lack of precautionary measures against infection, and censures particularly the negligence of householders whose houses are placarded as containing typhoid patients. As a means of preventing the further spread of the disease, Dr. Whitelaw has issued instructions to the public as to the best means of preventing infection.

THE Oddfellows' Hall at Edmonton is being converted into a hospital. The new hospital will make provision for forty patients, whereas the old building could only accommodate fifteen.

THE outbreak of typhoid in Edmonton is now practically over. During October fifty-eight cases were reported, a much smaller number than during the preceding month. Other cases of infectious diseases reported are: twenty cases of diphtheria, six of measles, three of scarlet-fever, and two of chicken-pox.

A COMMITTEE was recently appointed by the Edmonton city council to enquire into the question of hospital grants. Application had been made by the Royal Alexandra Hospital for \$250,000, and by the South Side Hospital for \$300,000. In addition, the Sisters of the Misericordia Hospital requested that \$200,000 be granted to them in order that they might increase their accommodation to two hundred beds. The enquiry resulted in a recommendation being made to the council by the committee that a grant of \$180,000 be made to the Royal Alexandra and of \$150,000 to the South Side Hospital. It was considered that the latter hospital could

build one wing next year, and later could make further extension as it was found necessary to do so. At a meeting of the council on October 29th, in accordance with the above recommendation a grant of \$150,000 was made to the South Side Hospital, but the grant to the Royal Alexandra was increased to \$225,000. No definite decision was made concerning the grant asked for by the Misericordia Hospital.

THE establishment of a municipal hospital in Calgary is a question which is receiving the consideration of a committee appointed to enquire into the matter. It was suggested that the old isolation hospital should be converted into a municipal hospital, but the proposal was not favourably received. As yet no definite decision has been made.

### BRITISH COLUMBIA

SCARLET FEVER has broken out at Rossland and it has been necessary to open a temporary isolation hospital.

THE Vancouver Isolation Hospital is now completed. The cost has been about seventy-five thousand dollars.

At a meeting of the Vancouver Hospital board, held October 29th, it was suggested that the municipalities of South Vancouver, Point Grey, and Burnaby should contribute to the support of the hospital. The chairman stated that during the nine months ending September 30th, two hundred and forty-four patients had been received from South Vancouver, sixty-one from Point Grey, and thirty-two from Burnaby. These patients spent five thousand eight hundred and sixty-two days in the hospital at a daily cost to the hospital of \$1.94 for each patient. The net loss sustained by the hospital was \$6,616.98. The suggestions made have been forwarded to the respective councils for their consideration.

THE first annual meeting of the Nicola Valley General Hospital at Merritt was held October 31st. The hospital was opened last February, and the first patient admitted on the seventh of that month. Since then one hundred and thirty-four patients have received treatment. The hospital has accommodation for eighteen beds; at present this is more than sufficient, the average number of patients in the hospital at one time having been nine. How-

ever, provision has been made for extension should it be found necessary.

MORE hospital accommodation is urgently needed at Victoria. Since the Royal Jubilee Hospital was built, with a capacity of fifty beds, the city has grown rapidly and, consequently, the demands for hospital treatment have increased. For months the average number of patients treated has been over one hundred and applicants are being refused admission every day. It is felt, therefore, that some provision must be made at once for more extensive accommodation. One hundred and ten thousand dollars have already been secured for this purpose, but, if the work of the hospital is to be continued satisfactorily, new buildings must be erected, and to do this the sum of five hundred thousand dollars will be required. At a recent meeting of the city council, it was decided that a by-law should be submitted to provide two hundred thousand dollars for the new hospital. It is understood that, if Victoria will do its share, the provincial government will give some financial assistance.

A NEW building, to be used as a maternity hospital, is to be added to the Duncan Hospital. The plans were submitted to the board of directors early in October and it is hoped that the building will be completed before the spring.

DURING the quarter ending August 31st, thirty-three cases of scarlet fever and fifteen cases of mumps were reported in Nelson. We understand from the daily press that Dr. E. C. Arthur, the medical health officer, has recommended that the present isolation hospital be pulled down and the material used next spring to erect a new building. He states that it is impossible to disinfect the old building satisfactorily.

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## Canadian Literature

### ORIGINAL CONTRIBUTIONS

*Dominion Medical Monthly*, November, 1912:

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| Presidential Address, Canadian Medical Association . . . . .  | H. G. MacKidd. |
| A Model Medical Staff for a Modern General Hospital . . . . . | G. W. Howland. |

*The Public Health Journal*, October, 1912:

- A Survey of Public Health . . . . . C. A. Hodgetts.  
 The Open-air School Movement, 1904-1912 . . . A. J. Greene.  
 The Ontario Public Health Act . . . . J. W. S. McCullough  
 The Removal and Disposal of Garbage in its  
 Relation to Public Health. . . . . R. R. Knight.  
 Tuberculosis and the Public . . . . . G. D. Porter.  
 Alcohol and Tuberculosis . . . . . J. Johannesson.

*Bulletin from the Royal Victoria Hospital, Montreal*, No. 2:

- Some Clinical and Pathological Aspects of  
 Glaucoma: A Retrospect of two hundred  
 cases . . . . . F. Tooke.  
 Studies in Hæmatology:  
 1. On Aplastic Anæmia . . . . . R. H. M. Hardisty  
 2. On Subleukæmic Sarcoleukæmia . . . O. C. Gruner.  
 3. On Acute Macrolymphocytar Myeloid  
 Leukæmia, with report of a case . . . O. C. Gruner.  
 An Analysis of Eighty-two cases of Fatal Acute  
 Pericarditis, with an Appendix on ten cases  
 of Tuberculous Pericarditis . . . . A. R. Landry.  
 Tuberculosis of the Pericardium . . . . E. J. Mullally.  
 Endocarditis, with special reference to the  
 Ulcerative Form and to Streptococcus  
 Infection and Immunity . . . . . J. C. Meakins.  
 Paroxysmal Tachycardia . . . . . C. F. Moffatt.  
 Dentigerous Cyst . . . . . E. H. White.  
 Carcinoids of the Ileum . . . O. C. Gruner and J. H. Fraser.  
 Chorio-Epithelioma of the Testicle . . . C. B. Keenan.  
 Studies in Tissue Diagnosis:  
 1. Carcinoma of the Prostate . . . . W. Hutchinson.  
 Lympho-sarcoma of the Stomach . . . O. C. Gruner  
 Glandular Enlargements at the root of the  
 Neck . . . . . O. C. Gruner.

## Medical Societies

### ST. JOHN MEDICAL SOCIETY

A MEETING of the St. John Medical Society was held on Wednesday, October 9th. The chair was taken by Dr. D. C. Malcolm, the president. Among the members present were: Drs. Malcolm, Thos. Walker, James Christie, McDonald, Dunlap, Pratt, Kelly, Duval, T. D. Walker, Allingham, McIntosh, Rowley, Macaulay, Loggie, Crawford, Bentley, and Corbett. An interesting paper on "Hospitals and Hospital Management" was read by the president, and was followed by a discussion.

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### VALLEY MEDICAL ASSOCIATION

A MEETING of the Valley Medical Association was held at Kentville, N.S., September 18th, on which occasion the following resolutions were moved and seconded: "Whereas the Victoria General Hospital is generally overcrowded, with increasing demand for accommodation, and whereas this section of this province represented by this association has no local hospital, and no immediate prospect of any, it is therefore resolved that this association desires to express its sense of the need of an increase in the accommodation of the hospital, and its belief that an expenditure for that purpose would be justified to the extent of the full cost by the incalculable benefit accruing to suffering humanity; and that in the opinion of this association special accommodation for those patients suffering from tuberculosis would be a most desirable addition to the institution."

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### TORONTO ACADEMY OF MEDICINE

A MEETING of the Eye-Ear-Nose-Throat Section of the Toronto Academy of Medicine was held October 7th, 1912, Dr. Geoffrey Boyd in the chair.

CASES SHOWN: 1. Dr. Colin Campbell. Ruptured globe. The patient was driving in his automobile when he was struck in the eye by some flying body, and a subconjunctival rupture of the sclera was found above the cornea. There was a great deal of hæmorrhage; an attempt was made for a few days to save the eye, but subsequently it was removed. No light has been gained as to the cause of the blow, but it was thought it was a boy who had thrown some missile.

2. Dr. Price-Brown. Small dental plate, with one tooth attached, swallowed, setting up throat soreness. X-ray photograph showed the body near the pyloric end of the stomach, and it was removed by operation within forty-eight hours after being swallowed. Patient made an immediate recovery. Dr. Wishart spoke of a similar case where a bent pin lodged in nearly the same place. Dr. Boyd detailed his treatment in such cases.

3. Dr. Geoffrey Boyd. Chicken bone removed from the œsophagus by the direct method. After a good deal of difficulty the flat bone was seen with the œsophagoscope, seized with Bruning's forceps, and removed. Dr. Boyd spoke of the especial difficulty in seeing these bodies which are lodged just below the cricoid cartilage, and said that the instrument often had to be passed away beyond it; the foreign body might then be seen as the forceps was brought slowly back.

4. Dr. Trebilcock. Punctured wound in the ciliary region. This little girl had the ciliary region completely cut through in March last by the sharp point of a pair of rusty scissors, thrown at her by her sister. The wound was a quarter of an inch long, beginning at the root of the iris just below the cornea, and passing backward. The red reflex was easily seen through it, and vitreous was extruding. This was excised and two stitches put in the sclera. There was very little re-action and the vision is perfect.

5. Dr. Trebilcock. Man aged thirty-five, injured in the ciliary region by a flying piece of railway fog-signal. The injury was in the same region as the last case. The root of the iris was cut as the wound went into the cornea. The vitreous was seen in the wound but did not protrude. Two stitches were put in the sclera, and though there was some re-action lasting for two weeks, the man left the hospital early in July and is still well. The vision was only fair at the time of leaving and has not been tested since. Dr. Reeve spoke of the importance of removing all tissues in the wound; then, if there were no sepsis, he did not think there was much additional danger in wounds in this region. Dr. Camp-

bell said that these cases sometimes turn up after a long time with secondary trouble. He had lately seen one where trouble had come after the eye had been quiet for three years. Dr. MacLennan suggested the use of a conjunctival flap in many cases of this nature, saying that he considered it reduced the danger of subsequent infection.

6. Dr. Trebilcock. Uni-lateral parenchymatous keratitis. The cornea is mottled with haze, and there are some spots suggesting the mutton-fat deposits on the posterior surface. There is a good deal of injection and epiphora, but no pain. Began about three weeks ago, co-incident with the extraction of an upper molar, which had an abscess at its root. History of snuffles when a babe for about three months, and a diffuse rash for the first two months. Since a year and a half old has been in perfect health. Father and mother are perfectly healthy; father never consulted a physician in his life. To be reported upon at a future meeting.

7. Dr. Wishart. Radical mastoid. Chas. C., aged nine years. Discharge from left ear since a baby. Radical operation December, 1911. There being no mastoid symptoms, attacked outer wall of attic, and then the antrum, but ultimately proceeded as far as the lateral sinus, where a pocket of débris was situated. Used no suture in the flap. Packed with gauze. Removed tonsils and adenoid. External wound was healed on December 17th. Used no packing after removal of first dressing. On February 17th, wall of cavity was quite smooth, with boracic syringing only. Hearing is better in the left than in the right ear.

This case is shown for the following reasons: The small amount of scar deformity; hearing is markedly better than before operation, and better than in the other ear; there was no packing of the wound after operation. In the latter point Dr. Wishart follows the Edinburgh teaching, where he was told they have treated such cases without packing for three years. Dr. Royce said that it was hard to avoid granulations; he found that anæmic children did not have granulations like full-blooded ones. He was glad to see so beautiful a result in this case, because packing was such a nuisance. Dr. MacLennan asked what cases were not packed in Edinburgh. Dr. Boyd had done two cases in the Children's Hospital without packing; in both granulations formed and in one he had to re-open and scrape them away. He congratulated the operator in the present case. Dr. Davies said he had seen over forty cases this summer abroad, and in not one was the result so good from a cosmetic standpoint as in this case. Dr. Wishart

said that Dr. Fraser, of Edinburgh, told him that they did not worry about granulations in these cases. They touched the very prominent ones with chromic acid, but that in time a smooth surface was practically always gained. He would not say that the period of healing was shortened, but the work of the surgeon was much lessened.

8. Dr. Wishart. Tumour in region of left tonsil. Began as an ulcerated surface on the cheek and uvula, with an abscess at the root of the last molar on the same side. The tooth was extracted and the cheek ulcer healed, but the uvula did not. He had had seven weeks of iodide treatment in unknown doses, during which the swelling invaded the tonsil, and increased. X-ray examination negative, and bacteriological examination showed a Gram-negative bacillus; Wasserman not yet done. Then paralysis of the left sixth nerve came on. The tumour is increasing. Patient denies any specific history. Dr. Price-Brown asked for temperature chart. He suggested the removal of a portion deeply for pathological examination. He detailed such a case seen ten years ago. Dr. Campbell asked if there were any involvement of the posterior ethmoidal cells, and if the man had had enough iodide to be satisfactory. Suggested that on account of the predilection of syphilis for the third nerve, the paralysis of the sixth might point to malignancy. Dr. Boyd had examined the nose and found no sign of involvement of either the ethmoidal cells or the antrum. Dr. Wishart promised to bring the case up later in the session.

9. Dr. Gilbert Royce. Hernia of brain. Case seen first May 11th, 1911. Brought in semi-conscious state to the hospital; intense headache, then vertigo and cerebral vomiting; two epileptiform seizures. All indications of mastoid trouble. Operated, and pus escaped as if under pressure; lateral sinus not involved. Good recovery. Second time in hospital under Dr. Boyd. Small mass in the mastoid region, tender for ten days, with redness. Operated, and tissue welled into the wound; this was considered broken down brain tissue and removed. Five days after operation there were epileptiform convulsions. Erysipelas subsequently developed and was recovered from. Hernia remained as before. Some hysterical element in the convulsions was suspected.

Dr. Boyd described the appearance of patient when he saw her at operation. His first thought was of suppuration in the old wound, but on cutting down he found degenerate cerebral tissue; bleeding was so bad that nothing could be done at the time. He does not think the hernia has anything to do with the

convulsions. Dr. Wishart said that the case was shown here on March 4th, and was pulsating at that time. He thinks the convulsions were not due to the tumour. Dr. Lyon would leave the hernia alone. Dr. Royce had seen only one other hernia of brain following mastoid operation, and that was held by the deep flap of the scalp.

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#### REGINA MEDICAL SOCIETY

A MEETING of the Regina Medical Society was held October 8th. The officers elected for the year 1912-1913 are: president, Dr. Gorrell; vice-president, Dr. Johnstone; secretary, Dr. Dakin. The members of the advisory committee are Dr. Low, Dr. Stevens, and Dr. Cullum.

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#### OTTAWA MEDICAL SOCIETY

At a meeting of the Ottawa Medical Society, which took place in St. Luke's Hospital October 25th, the following officers were elected for the year 1912-1913: president, Dr. Charles W. Gorrell; first vice-president, Dr. Campbell Laidlaw; second vice-president, Dr. Neil McLeod; secretary, Dr. A. MacLaren; treasurer, Dr. Harold Alford; executive council: Dr. A. T. Shillington, Dr. J. F. Kidd, Dr. R. L. Gardner, Dr. J. McKelvey Bell, and Dr. Omar Wilson.

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#### MONTREAL MEDICO-CHIRURGICAL SOCIETY

THE second regular meeting of the society was held Friday evening, October 18th, 1912, the president, Dr. D. J. Evans, in the chair.

**LIVING CASES:** The operative treatment of Pott's disease of the spine, by Dr. A. Mackenzie Forbes.

All are agreed that the treatment of Pott's disease of the spine should be principally by rest, fresh air, and diet. Rest should include both general rest and local rest. In the past we have endeavoured to get local rest by recumbency, plaster jackets, and

spinal splints or braces. There are a certain number of patients who cannot be suitably treated by either spinal braces or by the use of plaster of Paris jackets. These, I should say, are those who either have rebelled against these restraining measures, or who suffer from lesions which are difficult to control because of the position of them. I speak, for instance, of cervico-dorsal lesions and tuberculous lesions of the lower lumbar vertebræ. For these, operative procedures may be considered. There are three forms of operation suggested for the immobilization of spinal vertebræ affected with tuberculous disease: first, the steel splint suggested by Professor Lange, of Munich; second, the bone splint suggested by Dr. Albee, of New York; and third, the bridge of bone, suggested by Dr. Hibbs, of New York. In my opinion each of these operations has a distinct place in the surgery of the spine. For instance, where the spinous processes are long and the deformity is great the reduction of the spinous processes and the conversion of them into a bony bridge in order to unite the diseased vertebræ, as suggested by Dr. Hibbs, is undoubtedly of great value. On the other hand, if we are dealing with a child of tender years the operation suggested by Dr. Albee may often be of benefit. Lastly, I would say that if we are dealing with an adult who has been accustomed to live an active life, and who will not bear the restraint necessary for the organization of a bony splint, the steel splints suggested by Lange are of undoubted value.

I beg to present two patients illustrating two of these procedures:

1. Patient, an adult Indian, whose occupation is that of building bridges, and who has already been treated by plaster jackets which he refuses to wear, demonstrates treatment by the steel splints of Lange. In him the spinous processes of the affected vertebræ were exposed. On each side of these, steel splints have been placed. The two steel splints and the spinous processes have been lashed together by means of wire carried through holes drilled in the spinous processes of the diseased vertebræ. The x-rays, which I now present, demonstrate, first of all, the tuberculous lesion; and secondly, the spinal splints buried in the suggested position. It is hardly three weeks since the operation was performed on this man, and as you see he is able to get around with a considerable degree of comfort and it is hoped that the steel splints will give sufficient local rest to the diseased parts to facilitate the cure of the disease. This is the second patient whom I have presented before this society in whom the operation has been performed.

2. Patient, a little child, who a few weeks ago was operated on after the method of Albee, of New York. The lesion in this case is in the cervico-dorsal region. Here the spinous processes were exposed and incised vertically at the junction of their outer and middle thirds. Into this trough was placed a splint of bone taken from the tibia. The periosteum and interspinal ligaments were sewn over this splint, as also were the muscles detached on each side of the spine. In this way the bone graft has been absolutely buried in a gutter of bone, ligament, and periosteum.

DISCUSSION. Dr. J. M. Elder: With regard to the two methods, one would think that bone grafting would be better than putting in foreign bodies. I do not know, though, that this has proved the case. The question of bone grafting is one that I discussed here last session, and lately, in the *Annals of Surgery*, a paper has been published by Williams, of New York, in which the different views of different authorities are set out. Macewan, of Glasgow, and others, object to transplantation of the periosteum, and Murphy, of Chicago, says that any bone graft you put in is bound to be absorbed and may or may not be replaced by other bone, but it will not stay itself. Macewan says you should never transplant periosteum, that you should take subperiosteal bone. This is disputed by many. I would ask Dr. Forbes why he put in some periosteum on two sides of the bone. I presume Dr. Forbes holds the opinion that periosteum holds osteogenic properties and that his splint will grow stronger as time goes on. Undoubtedly I have seen his case of Lange's splint improve; fixation is certainly obtained, and this appears to be the essence of the whole cure in these cases of spinal curvature. I wish to congratulate Dr. Forbes very much on the results shown in these two interesting cases which he has presented so shortly after operative treatment.

Dr. F. R. England: I would like to ask Dr. Forbes if the osteitis in this case was in the bodies of the vertebræ or in the laminæ and articular processes. Generally in Pott's disease it is the bodies which are most affected; absorption goes on, and several discs fall together causing the spinous processes and laminæ to project posteriorly (the usual angular deformity). Splitting the spinous processes, as Dr. Forbes has done, must necessarily, for a time at least, weaken the column and lessen fixation, the very object which is so much desired in these cases.

Dr. Forbes: As Dr. Elder says, there is no question at all that the Lange operation is a very good one and probably the Albee is equally so; it seems to me that it is just a question of judgement as

to which shall be used in each particular case. In answer to the question as to whether these cases will do well, this is the first time that I have had the pleasure of showing a man like this Indian so soon after the operation. The question, therefore, is a very natural one, as to what will happen in time to come, but you will remember that it is only a year since I brought a man called McKeown before the society, who had been treated by similar splints during the two preceding years, and who had been occupying himself as a furnaceman with these splints buried in his back.

As regards the contention that the periosteum is not necessary, many people disagree with Professor Macewan, and I know that since his statements were made several have been investigating the subject and feel that the professor is wrong, and that the periosteum is the most important thing in the regeneration of bone. Knowing this I thought it safer, in the case of this little child, to preserve the periosteum when I buried the bone splint.

In answer to Dr. England's question, in the vast majority of Pott's disease of the spine, the primary lesion, and usually the later lesions, are in the body of the vertebræ. It seems to me that if you are able to immobilize a part of the vertebræ that you probably immobilize the whole. I have seen this done experimentally on a great many occasions. As regards the question of the body wedge placed between the two halves of the spinous processes, I may say that three or four years ago Brackett, of Boston, pointed out that nature's means of curing Pott's disease of the spine was by causing bony bridges to be formed about the posterior part of the vertebræ and not on the bodies themselves.

**PATHOLOGICAL SPECIMENS:** Exhibited by Dr. O. C. Gruner.

1. Multiple abscesses of liver, from a case of gangrenous appendicitis in a male aged twenty-four. The illness came on suddenly with acute pain in the upper abdomen two days before admission. An operation for cholecystitis was performed. The specimen shows numerous small abscesses of characteristic arbore-scent shape. There is septic clot in all branches of the portal vein.

2. Perforating tuberculous ulcer of cæcum from a patient aged thirty-five, admitted for appendicitis. There were symptoms of intestinal obstruction, but no clinical evidence of tubercle. The specimen shows a perforation of the wall of the cæcum near the position of the appendix, and a second perforation about an inch away from the first. The wall is much inflamed and the outer side is covered with plastic exudate.

3. Aneurysmal dilatation of one cusp of the aortic valve and gumma of heart wall from a patient aged thirty-six, suffering from cardiac failure. The specimen shows marked deformity of the valves, one cusp being markedly enlarged, while the others are shallow. Between the two latter is a whitish nodule of cheesy consistence. The aorta is much puckered.

4. Psammoma of cord. A microscopic section from a tumour successfully removed by operation. There were paralytic symptoms before operation. Duration before admission was four months.

CASE REPORTS: (1) Trichiniasis in Montreal, by Dr. H. B. Cushing and Dr. L. G. Houle. The case here reported occurred in the Royal Victoria Hospital during the past summer. Patient, A. D., a French-Canadian girl, aged nineteen, was admitted to the wards, July 5th, 1912, complaining of fever, pain in abdomen, arms and legs; she had lived in St. Henry ward for years, and had not been out of the city for several months. The illness began seventeen days previously; her feet began to pain her, she could not walk, and later the hands became involved and she could not use them. The swelling lasted three or four days and then disappeared altogether, but the pain and tenderness persisted till admission to the hospital. About the time her arms and legs were swollen her eyelids were also affected. A few days previous to her admission the pain in the abdomen was described as more or less continuous soreness and diffuse. No history of diarrhoea or vomiting. Patient was a well-developed girl, face full and round, no noticeable œdema of lids, no œdema of extremities; muscles firm and well developed. A moderate degree of continuous fever. Patient holds her arms semi-flexed at the elbow and cannot extend them on account of pain; cannot stand on account of pain in legs, and muscles all over body seem to be tender at various points not well defined by patient. No definite arthritis can be made out in any of the joints. Some abdominal tenderness, more or less diffuse, especially in the right side. Other systems of the body all normal.

As to the question of diagnosis, the case was regarded at first as either one of acute rheumatic fever or gonorrhœal arthritis, on account of pain in arms and legs, but the definite absence of distinct arthritis excluded these. The question of a peripheral neuritis was also considered, but there were normal reflexes and absence of paralysis and anæsthesia. Trichiniasis was next suggested on account of the characteristic syndrome of fever, pain, muscular tenderness, and a history of œdema of the eyelids, together with the

hands and feet. The blood count showed, red blood cells, 4,150,000; whites, 7,000; hæmaglobin, 80 per cent., and a differential count showed  $16\frac{1}{2}$  per cent. eosinophiles. On the strength of the marked eosinophilia Dr. Bruere was requested to search for trichinæ in a piece of muscle removed under local anæsthesia. On microscopical examination many trichinæ embryos were found from between the muscle fibres. On enquiry the patient said that the family had been eating a great deal of pork lately, and that she had been in the habit of cutting off a small piece of the raw meat and eating it in that way. A temperature of one hundred and sixty degrees kills the worms, so that probably the other members of the family had eaten the pork after it was cooked as none of them had been ill. While in hospital the patient improved without special treatment, and left the hospital on the twenty-ninth day after onset of illness apparently quite well.

There is no doubt that many trichinous hogs are used for food in this city every year. In a recent bulletin of the Department of Agriculture it is shown that one to two per cent. of the hogs slaughtered in the United States are infected with trichinæ. In 1883 Osler made an examination of one thousand hogs at the Montreal abattoirs and found four cases of trichinosis amongst them. Williams, of Buffalo, in five hundred and five consecutive human autopsies found twenty-seven cases with encysted trichinæ. This seems a large number, yet it is possible that many of us have overlooked the condition, it being taken for typhoid, influenza, rheumatism, etc. Dr. Girdwood drew my attention to the fact that a case report published in 1869 showed a series of cases occurring in the city at that time.

DISCUSSION. Dr. F. M. Fry: I would like to know what becomes of the encysted embryos in the muscles and what is the mortality, if any, and prognosis.

Dr. J. G. Adami: Ever since Professor Williams called attention to the frequency of evidence of old trichinosis in his autopsy material at Buffalo, I have had the possibility of this disease being present in our Montreal material constantly before me, and thus for some years past I have as a routine matter observed the neck muscles in the autopsies conducted by me at the Royal Victoria Hospital. This, it is true, is not a thorough examination, but had trichinosis been common, at least a certain proportion of cases would have showed the fine dots of calcified material representing the old encysted worms. These neck muscles are, perhaps, the best place in which to see these. I have never encountered them, and

thus have concluded that trichinosis is rare in Montreal, and have explained the figures afforded by Williams as being due to the fact that in Buffalo there is a large immigrant population of Germans accustomed to eating uncooked food. Thus I am interested to have at last a definite case here in Montreal.

Dr. F. G. Finley: One summer, doing autopsies at the General Hospital, I found two cases of trichinosis, both old; in one the worms were encysted in the muscles of the larynx, and the other in the larynx, muscles of the neck, thorax and diaphragm.

Dr. Maude E. Abbott: While in Berlin I saw two post mortems on the same day of extreme cases of trichinosis, practically all the muscles of the body being involved. An interesting fact is that while at the present time in Germany many cases of encysted trichinae are found, the actual history of the acute attack of diarrhoea, vomiting, the febrile stage, etc., dates back as far as sixteen years previously, this being the time that legislation took up the matter of the inspection of hogs and directed the public in the matter of eating only pork which had been well cooked. Cases of recent infection were said to be almost nil.

Dr. S. Ortenberg: I think those who have read the recent issue of THE JOURNAL OF THE CANADIAN MEDICAL ASSOCIATION will have noticed that a public health department has been inaugurated in the Federal Parliament. I therefore believe it would be a good plan to suggest to this new body at Ottawa that they should take steps towards appointing medical inspectors at the abattoirs to supervise all meat. In this way a great deal would be done towards the prevention of disease in general.

Dr. D. J. Evans: What are the regulations here with regard to the inspection of pork?

Dr. J. G. Adami: The inspection here in Canada is purely by the naked eye and is mainly directed towards such conditions as tuberculosis and other gross forms of disease. In Germany, as already stated, routine microscopic examination is made of certain muscles from each hog. This, indeed, is the only way in which trichinosis can certainly be detected and involves much work, for which I believe a corps of (generally) female inspectors is employed.

Dr. H. B. Cushing: As to the mortality from this disease, I recently saw a paper giving a collection of fifteen thousand cases, with a death rate of five per cent. Death usually occurs from exhaustion in the third or fourth week. As to what becomes of the encysted trichinae, they simply stay there for the rest of the patient's life. It does not seem to be established how they get into the pork, but it has been suggested that the eating of rats

by the hogs is a cause. As to the question of these cases occurring in Montreal, it seems to me, after having studied this case in the ward, that I might easily have mistaken similar cases before. Recently a large number of cases has been recorded from New York hospitals as the result of the routine eosinophile count, and the condition is looked for in all such cases, especially those of conjunctivitis with œdema. As to inspection of hogs, the only place it is done is in Germany; the only adequate means is by careful microscopic examination of the muscles by a specially trained staff. In the Bulletin of the United States Government, it is specifically stated that they do not recommend this inspection as it would be too large an undertaking, and that the easier method of prophylaxis is to educate the public to thoroughly cook their meat.

2. Complete twist of the mesentery. Operation; recovery.  
By Dr. E. W. Archibald.

The patient was a boy of sixteen years, who at the age of nine was operated on by the late Dr. Bell for perforative appendicitis. In June, 1911, he was admitted with the diagnosis of intestinal obstruction. His condition was so serious that at operation, which was immediately undertaken, it was considered wise to short circuit the distended ileum into the collapsed ileum below the obstruction, which was clearly due to a general matting of coils of bowel in the region of the old appendix wound. He made a quick recovery and was well till December 15th, 1911, when, about 9 a.m., he was seized with very severe generalized abdominal pain. He was admitted to hospital a little after midday in a state of serious collapse. He was very pale, almost pulseless, and clearly suffering extreme pain in spite of morphia. At a quarter to two I operated, that is, about five hours after the onset of symptoms. It was necessary to eviscerate the small bowel completely. It was purplish and almost black in its whole length, with the exception of about a foot from the duodenal juncture and about a foot and a half from the cæcum. It was very much distended. It was trocared in two places, giving exit to about a quart of very bloody, thin, faecal contents. The root of the mesentery was found drawn out like a stalk, twisted on itself through one complete turn, that is, three hundred and sixty degrees. The volvulus was reduced by taking up the entire package of bowel between the forearms and walking with it round the foot of the table. The twist had occurred in the direction of the hands of a clock. Circulation returned very quickly, although the mesentery was extensively ecchymosed and very œdematous. He made

an uninterrupted recovery and has remained well up to date. As explaining possibly the cause of the volvulus, there was found, in addition, a loose internal hernia of several feet of small bowel, through what appeared to be a gap in the root of the mesentery. This gap was situated at the point of the previous entero-enterostomy. The case will receive fuller consideration in a later report.

DISCUSSION. Dr. Fraser B. Gurd: I have had the opportunity of observing one case of complete twist of the mesentery. The outstanding clinical symptoms in this case were the extremely intense pain and the early and pronounced distention. As compared with obstruction from other causes, there is, moreover, a comparative freedom from vomiting. Even though an early clinical diagnosis of obstruction be made and a laparotomy performed, it is possible to lose a great deal of precious time if the operator attempts to localize the point of obstruction by searching piecemeal the whole intestinal tract. No other intestinal condition produces an exactly similar state of generalized distention and deep purple discolouration of the small gut, unless it be certain stages of superior mesenteric thrombosis.

Dr. J. M. Elder: I would like to ask Dr. Archibald if he has any idea of the loop he left out previously, e.g., the weight of it, or was it long enough or heavy enough to produce a dragging to predispose to the condition of twisting or volvulus? I do not understand that he followed this loop. It is a well-known fact that in emergency surgery of the abdomen, especially in obstruction cases, you do not know what you are going to find. A volvulus of the mesentery forms always in the direction in which the faeces pass along the large intestine. Any obstructive condition, e.g., a partial constriction of the bowel, anywhere near a fixed point, is particularly liable to produce volvulus, just as tumours of the bowel are particularly liable to produce intussusception. Adhesions and strictures are liable to produce volvulus; the condition of volvulus differs to some extent from that of intestinal obstruction of other kinds. In the latter you may not have involvement of the blood supply of the bowel, whereas in volvulus this is the essential factor, and if prompt action is not taken gangrene sets in.

Dr. F. R. England: At the last Montreal meeting of the Canadian Medical Association I reported a very similar case to Dr. Archibald's. The patient had been ill not more than thirty hours before operation. At the operation a volvulus was found of the small intestine, several coils had been twisted around the mesentery causing obstruction of the bowel and interfering with the blood supply. The involved bowel was black and much distended;

it was friable and ruptured on handling. The patient's condition was very grave, but, as there was no alternative, a rapid resection was done and end-to-end anastomosis made and seven feet five inches of bowel resected. The patient was very ill for thirty-six hours after operation, but made a good and complete recovery. I think it is now pretty well recognized that a long mesentery plays an important part in these cases; if not the determining cause, certainly it is a strong predisposing cause of volvulus in either the large or small intestine. Dr. Fraser Gurd's remarks on the importance of early diagnosis are well taken. I have not seen in any condition such violent symptoms coming on so suddenly and with so much abdominal distention.

#### HALIFAX MEDICAL SOCIETY

THE Halifax branch of the British Medical Association has ceased to be. This is the last of the many branches of the association that were formed in Canada fifteen years ago. It is felt that the time has come when some change should be made and an almost universal desire has been expressed for affiliation with the Canadian Medical Association. A new society has, therefore, been formed—the Halifax Medical Society. Most of the active practitioners of Halifax and Dartmouth have joined the society and it has already a membership of fifty-eight.

The second meeting of the new society was held November 4th. The meeting was most successful and was well attended. An interesting address was delivered by the president, Dr. E. A. Kirkpatrick, in which he referred to the urgent need of more extensive hospital accommodation in Halifax. The hospital is always crowded and patients frequently have to wait one, two, or even three, weeks before they can be admitted. The fact that plans have been proposed by the Canadian government which, if carried out, will entail an expenditure of \$30,000,000 on new terminals, increases tenfold the need for more hospital accommodation. It is proposed to approach the government of Nova Scotia with the request for an extension of the Victoria General Hospital, which will provide accommodation for one hundred additional patients in the public wards and twenty-five more private patients. At present there are one hundred and seventy beds in the hospital, fifteen of which are for private patients. Many other points of interest to the profession were touched upon by Dr. Kirkpatrick. His address was followed by an excellent paper on "Food poisons," by Dr. Simpson, of Dartmouth.

